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THE
COTTON MANUFACTURE OF DACCA.

THE
COTTON MANUFACTURE OF DACCÁ.

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Choutworth Dike

DESCRIPTIVE AND HISTORICAL ACCOUNT

OF THE

COTTON MANUFACTURE OF DACCA,

IN BENGAL.

BY

A FORMER RESIDENT OF DACCA.



LONDON:

JOHN MORTIMER, 141, STRAND.

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RESPECTIVE AND HISTORICAL ACCOUNT

OF THE

TOBACCO MANUFACTURE OF DACCÁ,

IN BENGAL.



BY

A FORMER RESIDENT OF DACCÁ.



LONDON:

JOHN WORTHINGTON, 111, STRAND.

1854

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TO

THE COUNCIL OF THE SOCIETY OF ARTS,

LONDON,

WHO HAVE PUBLICLY ANNOUNCED THEIR DESIRE TO

ENCOURAGE THE PRODUCTION OF TREATISES ON

“Any Special Object or Class of Objects,” shown at the
Great Exhibition,

THIS ACCOUNT OF THE MUSLINS AND OTHER FABRICS

OF DACCA, IN BENGAL,

COMPRISING A DESCRIPTION OF THE PROCESSES OF THEIR

MANUFACTURE, AND THE DETAILS OF THEIR HISTORY,

AS A BRANCH OF INDUSTRY AND COMMERCE,

IS RESPECTFULLY INSCRIBED BY

THE AUTHOR.

THE COUNCIL OF THE SOCIETY OF ARTS,

LONDON.

HAVE HEREBY APPOINTED THEIR CHIEF TO

MANAGE THE TRADING OF TRADING OF

THEIR OFFICE IN LONDON, AND IN THE

OF LONDON.

ACCOUNT OF THE TRADING AND OTHER BUSINESS

OF LONDON IN LONDON.

AND A DESCRIPTION OF THE PROGRESS OF THEIR

TRADING AND THE DETAILS OF THEIR BUSINESS.

A BRANCH OF TRADING AND BUSINESS.

IS HEREBY APPOINTED IN

THE AUTHOR.

OPINIONS OF THE PRESS

REGARDING THE

MUSLINS OF DACCA SHOWN AT THE GREAT EXHIBITION.

From the "Times," April 22nd, 1851.

"Turning to the class of manufactured articles, we find the long-established industries of the Indian Peninsula asserting their excellence in a manner at once characteristic and extraordinary. The same skill in goldsmiths' work, in metals, in ivory carving, in pottery, in mosaics, in shawls, in muslins, and carpets, was attained by those ingenious communities which now practise them, ages and ages ago. There the arts have remained stationary, while modern civilization has been slowly clambering up the steep ascent of merit in every department of labour. Yet, in these things, which the natives of India have done well from time immemorial, they still remain unsurpassed; and there is no part of the Exhibition likely to contain contributions more attractive than the products of Cashmere, Delhi, Benares, and Dacca, or than the metal manufactures of Midnapore, Mirzapore, and Gyah."

From the "Times," July 4th, 1851.

"We may look down with contempt upon industrial systems incompatible with our utilitarian standards, supplying only the luxuries and caprices of greatness, and careless of the comforts and wants of the masses. Yet in another point of

view these remarkable and characteristic collections have a value that can hardly be overrated. By their suggestiveness the vulgarisms in art manufactures, not only of England, but of Christendom, may be corrected; and from the carpets, the shawls, the muslins, and the brocades of Asia, and from much of its metallic and earthenware products can be clearly traced those invaluable rules of art, a proper definition and recognition of which form the great desiderata of our more civilized industrial systems."

From the "Morning Chronicle," May 24th, 1851.

"He will observe a most interesting model of the implements used by the female hand-spinner of fine cotton yarn at Dacca, in Bengal. The delicate spindle turned by the well-trained fingers; the piece of chalk to keep her fingers dry; the bit of shell, embedded in a lump of clay, to turn the spindles on; and the yarn produced so fine that a skein only weighs about two grains and a half. We may anticipate here to observe that in the other, the front compartments, are two stands occupied by the delicate gauze-like muslins made from this yarn, &c.

* * * * *

By this time the spectator will be drawn to one or other of the two glass cases occupying the ends of the compartment, and filled with specimens of the marvellous muslins of India, some plain, some worked in cotton, others richly and elegantly embroidered with gold or silver. Each piece is labelled with the name of the master manufacturer and of the weaver—all Hindoo names, unpronounceable, and almost uninscribable. Thus "Choloo Churm" informs us that a piece woven by "Hubeeoollah Tantee, of Golokonda."* is worth £10 (or 100 rupees); that it won the 25 rupee prize at Dacca; that it is ten yards long (yard wide), weighs only 3 oz. 2 dwts., and may be passed through a wedding ring.

* The name of a part of Dacca.

From the "Morning Post," June 13, 1851.

"Before examining the complicated mechanisms by which these results are obtained, it will be well to look into the Indian department, on the south side of the central avenue, near the transept, and inspect the models of the processes of the cotton manufacture in India. The cotton gin for cleaning the wool and preparing it for spinning, the spinning-wheel, and the looms there seen exhibit the rude, simple implements with which the natives of India, by dint of manual dexterity, are able to manufacture fabrics more delicately fine than can be produced by the aid of all our complicated mechanism, ingeniously as it is contrived, and most skilfully executed. The muslins of Dacca, of which specimens are exhibited, resemble a spider's web in fineness of texture, for a whole breadth may be drawn through a finger ring."

From the "Morning Herald," July 3rd.

"But all our Eastern contributors must yield the palm of superiority to India, where the art of manufacturing the finest descriptions of muslins was first practised, and where the primitive system has remained stationary for so many ages. The muslins of India, marvellous as they are in themselves, are still more so when we consider the rude and simple-looking machinery with which they are produced by the patient and finely-fingered Hindoos. In the south compartments are specimens of the *mulmul*, from Dacca, Golokonda, and other parts of the peninsula, which surpass in fineness of texture and delicacy of fabric, anything produced in this country, even by the aid of all the expensive and complicated machinery at Manchester. The fact can only be explained by the circumstance of the manual dexterity of the father descending to the son, and by the presence on the spot of the raw materials which produce these elegant and gauze-like tissues, which are termed "woven air." Some of these which are valued at from 20s. to 30s. per yard, are exhibited in two glass cases, and are in-

teresting and wondrous examples of the perfection to which this manufacture has been brought. A piece, one yard wide and ten yards long, will pass through the smallest wedding-ring, and weighs only three ounces. Another degree of attenuation and the tissue would inevitably 'vanish into thin air,' and having arrived at this acme of perfectability, we may appropriately take leave of this most curious and interesting department of manufacturing industry and ingenuity of the Exhibition.

From the "Illustrated London News," August 2, 1851.

"It is much to be doubted if we in England have any more delicate and beautiful goods than the muslins of Dacca."

From the "Globe, June 10, 1851.

"Most of our readers, especially of the fair sex, will have heard of, if not seen, the beautiful shawls of Cashmere, of almost fabulous worth, and the delicately wove and highly ornamented muslin fabrics of Dacca. These goods may be seen in the Indian collection, though scarcely closely enough for accurate examination, confined as they are in glass cases.

"As their name indicates, these fine muslins are manufactured in the province of Dacca, by native workmen. In value they vary much, arising from greater or less degrees of fineness and difference in the amount of embroidery or ornament. They run from five shillings the piece up to £10, but the more valuable kinds are rarely made, and only then when ordered.

"In India these muslins are much worn by both Europeans and natives, their extreme lightness rendering them peculiarly adapted to the climate; they are, however, not imported to this country, being considered far too slight in texture for European wear.

"The fine kinds of Daccas, called by the native dealers *mulmul khas*, are ten yards in length by eighteen inches, and

are so fine as to be easily drawn through a small ring without injury or violence. From these muslins, no doubt, was derived our term of mull muslins."

From Allen's "Indian Mail," June 3rd, 1851.

"We pass, therefore, without respect to order, to the charming collection of Dacca muslins arranged in glass cases in one of the inner compartments. So exquisitely soft and beautiful are these fabrics, that upon their first display on the 21st ultimo, they excited the special wonder and admiration of Her Majesty and Prince Albert. There is one plain gown-piece in the centre of the collection, ten yards in length and one yard and ten inches in breadth, of so delicate a texture that it may be passed through the smallest ring. The Queen, with her intuitive perception of the graceful, expressed her surprise that with such opportunities of suitable personal decoration, English ladies should persevere in disfiguring themselves with the stiff material which now goes to the construction of dresses. Consorting with the plain are specimens of figured and embroidered muslin, the embroidery consisting of gold thread and the beetle's emerald wing ingeniously and fancifully intertwined."

P R E F A C E.

THE Cotton Manufacture of Dacca was formerly a branch of industry of considerable value. It afforded employment to a large body of the inhabitants of the district, and was a source of profit to many native merchants, as well as to several European commercial factories. Its decline may be dated from 1793, about six years after mule twist came into general use in England. It is stated by the Commercial Resident of the Dacca factory, that, in 1799, numbers of weavers had, from want of employment, discontinued to work at the loom. Many of them were reduced to indigence, and obliged to follow other occupations; and it was estimated that the manufacturing industry of the district was then diminished to the extent of one-fifth of what it had been in 1792. Since the commencement of the present century the progress of its decay has been still more rapid. By means of wonderful mechanical inventions and the extended application of steam power, the cotton manufactures of Great Britain have, as it is well known, increased within that time to a prodigious extent, while those of Bengal, unable as regards cheapness to stand in competition with the products of machinery, have yearly declined, and have, indeed, since 1817, been virtually excluded from the markets of Europe. But though

thus superseded in a commercial point of view, the Dacca cotton manufacture, regarded as an art which produces some exquisite specimens of textile fabrics, was pronounced a few years ago, as indeed it still is, to be unrivalled. "Yarn," says Dr. Ure, in 1836, "continues to be spun and muslins to be manufactured at Dacca, to which European ingenuity can afford no parallel, such, indeed, as has led a competent judge to say it is beyond his conception how this yarn, greatly finer than the highest number made in England can be spun by the distaff, or woven afterwards by *any* machinery.—(Ure's "Cotton Manufacture of Great Britain." Vol. I, page 54.) Whether these muslins are entitled to the superiority which this writer, and more recently the press, have awarded them, or on the contrary, are now surpassed not only in tenuity and lightness, but also in the qualities of softness and durability—for which they are so highly appreciated—by the fabrics of other countries, is a question which perhaps will shortly be determined, and a decision officially announced at the Exhibition of the Works of Industry of all Nations. But whatever may be the result of a comparison of the Dacca muslins with similar productions of the looms of Europe, it will be admitted that the great celebrity, which these fabrics have for so many centuries possessed, imparts to the history of their manufacture a degree of interest which hardly pertains to any other branch of industrial art in India. To furnish some information respecting this manufacture, as regards both its past and present condition, is the object of the account given of it in the following

pages. It is derived partly from personal observation, and partly from official records, to which the author had access during a residence of many years at Dacca, while several of the notices elucidative of its history are extracted from works relating to India and to the cotton manufacture generally. It is remarked by a recent writer, in speaking of the art of weaving as practised by the Hindoos, that—"Among the many passing notices which are frequently met with in books of travel, and in popular works on the state of weaving in the East Indies, there is none that conveys such a notion of it as a person practically acquainted with the subject can say what really is the state of the art as it exists among them. A rough outline of the mechanical means is given, but the points of value as determining the question are wholly lost sight of, namely, the adaptation of the tools to the varieties of the work, and the skill as manifested by them in the management of the yarn, * * * the size of the shuttle, the build of the heddles, the depth of the shed, the tension of the web, the length of the stretch, the state of the paste and manner of using it in the process of dressing, are nowhere noticed."—"White on Weaving," pages 24 and 25). To supply, in some measure, the information wanted on these points, a more detailed account than might have otherwise been thought necessary is here submitted of the processes of spinning and weaving in their several successive stages, from that of the first preparation of the cotton for the spindle down to its fabrication into cloth in the loom—the principal operations described being illustrated with woodcuts, copied

from drawings executed by a self-taught native artist. It may be observed that the most striking feature of these processes, and, indeed, of all the mechanical arts of India, is the apparent inadequacy of the means employed, when contrasted with the results produced. With instruments of rude construction articles are there manufactured which, both in quality and beauty, frequently surpass similar works executed by complicated machinery in other countries. The processes, primitive though they be, by which these ends are accomplished, are, perhaps, not altogether unworthy of notice. It is possible, indeed, as Mr. Colebrooke remarks, that something suggestive of improvement, even in the manufactures of Europe, may still be gleaned from a more extensive acquaintance with the practical arts of Asia: "It has happened in many instances that inventive faculties have been tasked to devise anew what might have been as easily copied from an Oriental type, or unacknowledged imitation has reproduced in Europe with an air of novelty what had been for ages familiar in the East. Nor is that source to be considered as already exhausted. In beauty of fabric, in simplicity of process, there possibly yet remains something to be learned from China, from Japan, and from India, which the refinement of Europe need not disdain."—"Discourse to the Royal Asiatic Society of Great Britain—1823.")

ON THE
COTTON MANUFACTURE OF DACCA.

CHAPTER I.

INTRODUCTORY REMARKS. — PLACES OF
MANUFACTURE.

INDIA was the ancient seat of the cotton manufacture in the East, and the country from which this branch of industry was introduced into Persia and Egypt, and thence into Europe. Throughout Hindostan, the arts of spinning and weaving cotton fabrics have been practised from remote antiquity; but in no part of that extensive region have they been carried to such perfection as in Bengal. The muslins of this province were famed for their fineness upwards of sixteen centuries ago, and are still made so exquisitely delicate that "some of them," as a writer remarks, "might be thought the work of fairies, or of insects, rather than of men."*

* "History of the Cotton Manufacture of Great Britain."
By E. Baines, jun., p. 56.

The locality most celebrated for this manufacture is the district of Dacca, situated in the eastern division of the province. It comprehends a tract of country near the confluence of the Ganges, Brahmaputra, and Megna, which, exclusive of Dacca Jellalpore, now constituting a separate district, is about 1,960 square miles in extent.* It consists of two portions, which differ widely in regard to physical aspect and soil. One is considerably above the highest level of the surrounding rivers in ordinary seasons of inundation, and is chiefly composed of clay, and of siliceous and calcareous earth mixed with iron (*kunkur*). It forms a part of a similar tract about seventy miles in length, which extends into the neighbouring district of Mymunsing, and which is overrun with dense jungle. The other portion, which occupies more than one-half of the area of the district, is of alluvial formation, and presents the appearance of extensive fertile plains, intersected by branches of the rivers above mentioned, which inundate places of a low level to a depth varying from two to twelve feet during three months of the year. This portion, except its lowest sites, which form some extensive morasses (*jheels*), is highly cultivated, and produces abundant crops of rice, pulse, mustard, sesamum, sugar, indigo, cotton, safflower, turmeric, ginger, and betel leaf. The heat of the climate of Dacca is some degrees lower than that of the western districts of the province. The mean maximum temperature of May and September (the two

* "Trigonometrical Survey of India." Printed by order of the House of Commons, 15th April, 1851.

hottest months in the season) was, as deduced from ten years' observations, 87·39 degrees in the former, and 88·34 degrees in the latter month. Humidity is the characteristic of the climate. The average annual quantity of rain during eight years was 70·3 inches. The greatest fall in any year during that period was 93·9, and the least 46·8 inches. The population is composed of Hindoos and Mahomedans, in about equal numbers, and was estimated in the year 1837 at 530,000. Belonging to the district, are several localities which possess a degree of antiquarian interest founded on the historical traditions of the natives. One of these, called Bickrampore (Vickramapura), is regarded by the Hindoos as the ancient site of the capital of the kingdom of Bongoz, or Banga-desa, and place of residence of the Rajahs Adisur and Bollalsen* — the only

* The site of their palace is still pointed out at a place called Rampal. It covers a considerable extent of ground, and is of a quadrangular form, surrounded by a moat about 200 feet wide. There are now no traces of houses within this enclosed space; but in the country immediately around it, to a distance of some miles, the foundations of walls have been found at a considerable depth below the surface, and have supplied materials for building in the surrounding country for many years past. There are also several mounds, from which bricks have been dug out, and where copper, gold, and silver articles have been found. Near the site of the palace there is a pit or excavation, called "Agnikunda," where, it is said, the last Hindoo prince of Bickrampore and his family burned themselves. Tradition states that the Rajah, when he went forth to oppose the Mahomedan invaders of his territory, took with him a carrier pigeon, whose return to the palace was to be regarded by his family as an intimation of his defeat, and a signal,

two Hindoo kings of Bengal regarding whose history the natives of this part of the country profess to have any knowledge. Two other places, called Sabaar and Kapasia, situated in the midst of the jungle of the diluvial portion of the district, are also of great antiquity, and are said to have belonged to two powerful and independent rajahs, named Horischunder and Sissoo Pal. Kapasia, which derives its name from the Hindee word *kāpās*, "cotton," was, in all probability, the seat of the muslin manufacture in remote antiquity.

The business of weaving is carried on, to a greater or less extent, in almost every village of the district, but the principal manufacturing towns (*aurungs*) where muslins are made, are the city of Dacca, Sunargong, Dumroy, Teetbadee, Junglebaree, and Bazetpore.

Dacca is situated on the Booreegunga, formerly a branch of the Ganges, but now one of the several channels, through which the Brahmaputra discharges its waters into the Megna. It stands on the northern bank of this river, extending along it to a distance of about four miles, and is surrounded inland, partly by comparatively high ground covered with jungle, and partly by low rice fields, which are inun-

therefore, to put themselves to death. He gained the victory, but, unfortunately, whilst he was stooping down to drink from the river after the fatigues of the day, the bird escaped from the loose folds of his waistcloth (*kamarband*), in which it was concealed, and flew to its destination. The rajah hurried homeward, but arriving too late to avert the consequences of the accidental flight of the winged messenger, he cast himself upon the funeral pile still smoking with the ashes of his family, and thus closed the reign of the last dynasty of Hindoo princes in this part of India.

dated to a considerable depth during the rainy season. Like most native towns in Bengal, it is very irregularly built. Its streets and lanes are long and narrow, and lined with brick houses and thatched huts, erected close to each other and placed without any regard to uniformity. In some of the bazaars occupied by certain castes, as weavers, goldsmiths, and shell-cutters, the style of architecture is peculiar, many of the houses of three or four stories in height, having only a frontage of eight or ten feet, while the side walls, unperforated either by doors or windows, extend back to a distance frequently of sixty or seventy feet. The extremities only of these buildings are roofed, the middle part of the enclosure of each house being converted into a small open court. The dwellings of the European residents are large and well built, and give to the town a somewhat imposing appearance on approaching it from the south. Most of them stand on the bank of the Booreegunga, and have in front, gardens upon terraces, the walls of which are washed by the river in the season of inundation. The population, consisting of Hindoos and Mahomedans, with a few English, Armenians, Greeks, and descendants of Portuguese, was computed in the year 1838 at 68,000. Some idea of the present condition of Dacca, and of its rank among Indian towns, may be formed from the following enumeration of its public works, places, institutions, and establishments in the year 1838. They comprised ten bridges, including an iron suspension one, across a creek and its branches which intersect the town; thirteen landing-places (ghauts) at the river; twelve bazaars for the sale of articles of food; one public

square or market-place; seven police-stations; the jail—magistrate's court—civil court—treasury and office of the collector of revenue—office of the commissioner of revenue—post office—native hospital—lunatic asylum—vaccine institution—dispensary—fund for the relief of the poor—conservancy establishment—municipal committee of Europeans and natives for improving the town—college for the education of natives—English Protestant church—Roman Catholic church—Armenian church—Greek church—Baptist chapel—119 Hindoo temples, or places of worship of different sects; 180 Mahomedan mosques, shrines, and places of religious ceremonies; the cantonment for a regiment of native infantry, and detachment of artillery—government depot of elephants for the army; the office of the department of public works and buildings; and commissariat office. Its principal Mahomedan public edifices are the *Lāl Bāgh*, or palace (now in ruins) of the Mogul governor; three buildings formerly used as caravansaries; the *Edgah*, or public place of prayer at the festival of the *eed*; and the *Hossainee dālīn*, where the Mohurram ceremonies are performed. Dacca, under the name of Jehangire-nuggur, succeeded Rajmahal as the capital of Bengal in 1608—a distinction which it continued to possess till 1704, when the seat of government was removed from it to Moorshedabad. It has long been the principal seat of the cotton manufacture of Bengal, and is mentioned by Manrique, Tavernier, and other travelers during the 17th century, as a town of great trade,*

* "Tavernier's Travels," translated by J. P., London, 1684. Part II., book i., ch. viii.

and "a mart that was frequented by people of every nation."* The English, Dutch, and French had formerly factories here for the exportation of muslins to Europe. Weaving and embroidery, though they have greatly declined since the last century, are carried on to some extent, and still constitute the principal branches of industry of the place. The present number of weavers' houses is estimated at 750.

Sunargong, or Painam, as it is frequently called, is a town situated near the old channel of the Brahmaputra river, about thirteen miles south-east from Dacca. Having formed a part of Vickramapura, the district in which the capital of Banga-desa was situated, it is regarded as a place of considerable antiquity, and has acquired some importance in Indian history from its having been the seat of government during the reign of the independent Mahomedan kings of Bengal in the 14th century. It continued to be the capital of the eastern division of the province, until Dacca was constituted the metropolis of the country in the 17th century. It stands in a secluded place, surrounded by wood, and encircled by a deep muddy creek, which appears to have been originally a moat designed for its defence—the only access to it being by a bridge across this creek, and upon which there are still the remains of a gateway.† It possesses a considerable number of substantial brick

* "Murray's Discoveries in Asia," Vol. II., chap. 99.

† In the country around Painam there are still to be seen several tombs, mosques, and one or two bridges built during this time; also tanks, and the remains of a high raised road made in the time of Shere Sha.

houses, of two to four stories in height, and large, well-built thatched cottages, laid out in the form of two long narrow streets. The population, consisting chiefly of Mahomedans, is estimated at 5,000. Sunargong is mentioned by Abul Fazel and by Ralph Fitch, about the end of the 16th century, as a place where the finest cotton cloths were made. It is celebrated for muslins of a thin texture, also for flowered fabrics, which are manufactured chiefly by Mahomedan weavers in the town, and in the country around it. The East India Company, during the time they were engaged in trade, had a warehouse for cloths at this place, and had generally from thirteen to fourteen hundred weavers' names registered in their books. The number of weavers' houses is now estimated at 300.

Dumroy stands on the river Bunsî, a branch of the Brahmaputra, about twenty miles west of Dacca. It is not far distant from Sabaar, and is regarded by the natives as one of the most ancient manufacturing stations in the district. It is almost entirely composed of cane and mat huts, or cottages—large and well built—and having the high arched roofs peculiar to the thatched dwellings of the natives in Bengal. The inhabitants are principally Hindoos, and are estimated at 6,000 in number. This town furnishes the greater part of the fine thread used in the Dacca looms, and is more famed for this article than for its cloths. The number of weavers' houses is estimated at 400.

Teetbadee is a village situated on the eastern side of the river Luckia, and within a few miles of the tract of country called Kapasia. It is celebrated for the fine quality of the cotton grown in its vicinity, and for the

manufacture of thin muslins. The number of weavers' houses is estimated at 200.

Junglebaree lies on the eastern side of the Brahmaputra river, in a part of the country which was formerly included in the province of Dacca, but which now constitutes a portion of the neighbouring district of Mymensing. It was, at one time, a populous manufacturing station, but the number of weavers' houses in it is now reduced to about 100. It is stated that in the time of Sooraj-oo-Dowlah, 700 families deserted it in consequence of the oppression of the officers of that Nawaub, and settled in other parts of the country.*

Bazetpore is about eighteen miles distant from Junglebaree; and like it, it now forms a part of the district of Mymensing. The cotton raised in the vicinity of these places is of a superior quality; and both stations have long been celebrated for the manufacture of some of the finest muslins exported from Dacca.

Besides these stations, there are several other places in this and the neighbouring districts, where the manufacture of cotton goods constitutes the principal branch of industry. Muslins of several kinds are made in Moorapara, Baleapara, and other villages on the banks of the Luckia, and mixed cotton and silk goods at Abdoolapore, in Bickrampore. Coarse fabrics are manufactured at Kalokopa, in Dacca Jellalpore, and at Narainpore, Chandpore, and Serampore, in Tipperah. The three latter places were *aurungs* or manufacturing stations, subordinate to the Dacca factory, and supplied large quantities of the calicoes, dimities, and inferior goods formerly exported to England by the East India Company.

* "Bolts's Considerations on Indian Affairs," page 194.

CHAPTER II.

COTTON.

THE cotton of which the fine Dacca muslins are made, is produced in the district. The plant is an annual, and attains a height of four to five feet. It is a variety of the *Gossypium Herbaceum*; but, according to Dr. Roxburgh, it differs from the common herbaceous cotton plant of Bengal in the following particulars, viz. :—

“1st. In its being more erect, with fewer branches, and the lobes of the leaves more pointed. 2nd. In the whole plant being tinged of a reddish colour, even the petioles and nerves of the leaves, and being less pubescent. 3rd. In having the peduncles which support the flowers longer, and the exterior margins of the petals tinged with red. 4th. In the staple of the cotton being longer, much finer, and softer.”* This is the indigenous (*desee*) cotton of Dacca, which has been cultivated in the district from time immemorial, and which is generally known there by the name of *photee*. Another variety of cotton called *bairaiti*, which is raised in the eastern part of Bengal, has been regarded as yielding the material of which the fine muslins are fabricated;

* Roxburgh's "Flora Indica." Vol. III., p. 184.

but at Dacca it is considered as being inferior to the photee, and as differing from it, as it does from the *desee* cotton of Hurriaul, in having a larger pod, and shorter and coarser fibres.† Cotton is raised in different parts of the district, but the photee, or finest kind, is grown only in certain localities situated along the banks of the Brahmaputra or its branches, and the Megna. Speaking of the latter of these sites of cultivation, the Commercial Resident of Dacca in the year 1800 remarks :—" A tract of land extending from Feringy-bazar, twelve miles south-east of Dacca, along the banks of the Megna to Edilpore, twenty miles north of the sea, occupying a space of about forty miles in length, and in some places as far as three in breadth, and situated in the pergunnahs of Kidderpore, Bickrampore, Rajenagur, Cartickpore, Serampore, and Edilpore, is allowed to produce the finest cotton (kapas) grown in the Dacca province, and, I believe, I might add, in any part of the world, since no cotton that has yet been compared with it, whether the produce of India, or of the islands of Mauritius or Bourbon, whose cotton is celebrated for its superior quality, has been found equal to it." He attributes the superiority of the cotton raised here to the vicinity of this part of the province to the sea—" the water of which," he remarks, " mixing, as the tide rolls it in, with the water of the Megna which overflows that part of the country during three months in the year, deposits, as it subsides, sand and saline particles which very con-

† " Reports on Cotton-wool, Raw Silk, and Indigo." Published by the Court of Directors. Page 335.

siderably improve and fertilize the soil, which consists of light sand and brown earth." The other sites of cultivation noticed by him are "the banks of the Luckia from the Dulaseree river to a little above Roopgunge, about sixteen miles in length, and a few miles on the banks of the Brahmaputra, north of the Dulaseree," which, together with the country above mentioned, "furnish the greater part of the kapas used in the Dacca province. Of the rest, some is grown in Buldecal, Bowal, and Alephsing, and some imported from Boosna in the adjacent district of Rajeshye."*

Two crops of cotton are raised in the district. One is gathered in April and May, another in September and October. The former yields the finest produce, and is the crop, therefore, which is most extensively grown. The land intended for this cultivation is generally laid down with rice at the beginning of the rainy season; and, on this crop being reaped in October, the stubble is burned, and the ground dug or ploughed, and otherwise prepared for the cotton. The seeds are kept with their wool on them during the rainy season; and in order to preserve them from damp, they are put into an earthen jar, smeared inside with *ghee* or oil—the vessel, with its mouth closed up, being generally hung from the roof of the ryot's hut, over the spot where the fire is kindled. They are sown, in November, in parallel rows about a foot and a half apart, and at a distance of about four inches from each other in the rows—

* "Letter from the Commercial Resident of Dacca to the Board of Trade, Calcutta," dated November 30, 1800.

each seed being moistened with water before it is dropped into the ground. In Bickrampore they are not unfrequently first sown in prepared soil, contained in large earthen pots; and are, after they have germinated, transplanted in rows in the open field. When the plants are about four inches high, the earth is ridged up about their roots, and the ground occasionally weeded. They are liable to injury in the spring season from long-continued drought, caterpillars and other insects, hail-storms, and heavy rain. In April and May the wool is picked from the pods, and afterwards the dry stems of the plants are rooted up. Cotton is sometimes cultivated on the same land for three years in succession, the ground being allowed to lie fallow during the fourth year; but the more common practice is either to raise sesame (*til*) and rice alternately with it, or to sow the former in the third, and the latter in the fourth year. The best growers of cotton are persons of the caste of Barue, or cultivators of betel leaf (*Piper betel*). About four and a half pounds of seed are required to sow a field measuring eighty square cubits; and this extent of cultivation will, if the season be ordinarily favourable, generally yield about one hundred and sixty pounds of kapas (seeds and wool unseparated). It is estimated that eighty siccas weight (2 lbs.) of kapas contain sixty-five siccas of seeds, and fifteen of wool of different qualities. The Commercial Resident states that only "a third of the fifteen siccas of cotton—that part which adheres most to the seed—is capable of being spun into the finest thread. Another part of it is fit for making thread of

inferior degrees of fineness, and a third for coarse thread only.”*

The cotton of the autumnal crop, which is raised from seed sown on high lands in the month of April, is not considered so good as that of the vernal one; and its inferiority is attributed to the vegetation of the plant being more rapid, and therefore weaker than that grown in the winter season. Its fibre is watery, and swells on bleaching; and its value in the market is generally about one rupee less per maund than that of the cotton plucked in the spring. The average price of undressed cotton (*kapas*) in the district for some years past has been three rupees per maund (80 lbs.), which is one-half of the price that was paid for it in the year 1789. The profit accruing to the cultivator is small, and arises chiefly from much of the labour required in its production being done by his family. The cultivation has declined with the manufactures of the district; and it is said that the cotton has somewhat deteriorated in the fineness of its staple.

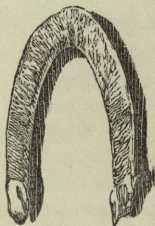
* A particular portion of the fibres of cotton being thus only used for the manufacture of the finest thread, it is supposed by Mr. Chapman (“On the Cotton and Commerce of India,” pp. 30 and 31), that the fineness of the Dacca muslins is to be ascribed to this alone, and not to any superiority of the cotton grown in the district. The Dacca cotton, however, is generally admitted in Bengal to be superior to that produced in other parts of the country; and to this, the fineness of the fabrics made from it, is partly to be attributed. It is stated that an attempt was made in 1790 and 1791 to encourage the cultivation of this kind of cotton in other parts of Bengal, but that the experiment proved unsuccessful.

Besides the indigenous cotton of the district, two other kinds of this article called Seronge, and Bhoga, are used in the manufactures of the province. The former is the produce of the north-western part of India, and is imported, in its dressed state, into the district from Mirzapore. It is used in the manufacture of fabrics of a medium quality ; but, since the introduction of English yarn into the district, the consumption of it has been decreasing yearly, and is now reduced to a very small quantity. The Bhoga cotton grows on the Garrow, Tipperah, and Chittagong hills. It is of an inferior quality, and is used exclusively in the manufacture of the coarsest fabrics, and for making ropes, tapes, &c. Formerly, a considerable quantity of cotton was imported into Dacca from Arracan ; but, since the Burmese war in 1824, the traffic in it has entirely ceased.

CHAPTER III.

SPINNING.

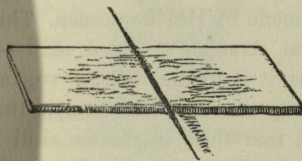
THE cotton in the state of *kāpās* (*i. e.* seeds and wool un-separated), is cleaned and prepared by the women who spin the yarn. Fragments of the leaves, stalks, and capsules of the plant are carefully picked out with the fingers, and the wool adhering to the seeds is then carded with the jaw bone of the *boalee* fish,* the teeth



of which, being small, recurved, and closely set, act as a fine comb in removing the loose and coarser fibres of the cotton, and all extraneous matter, such as minute particles of earthy and vegetable matter, from it. The Hindoo spinner, with that unwearied patience that characterizes her race, sits down to the laborious task of cleaning with this instrument, each separate seed of cotton. Having accomplished this, she proceeds to detach the fibres from the seeds. This is done by placing a small quantity of

* *Silurus boalis*, see Hamilton's "Fishes of the Ganges."

the combed cotton upon a smooth flat board,* and then rolling an iron pin backwards and forwards upon it with the hands, in such a manner as to separate the



fibres without crushing the seeds.† The cotton is next teased with a small hand bow, formed of a piece of bamboo with two elastic slips of the same

material inserted into it, and strung with a cord made of catgut, muga silk, or of plantain or ratan fibres, twisted together. The bamboo slips are moveable within the centre piece, and in proportion to the extent they are drawn out, or pushed back, the tension of the cord is increased or diminished.

The cotton having been reduced by the operation of bowing to a state of light downy fleece, is spread out and lapped round a thick wooden roller; and, on the removal of the latter instrument, it is pressed between two flat boards. It is next



rolled round a piece of lacquered reed of the size of a quill; and lastly, is enveloped in the smooth and

* Made of the wood of the Chalta tree (*Dillenia speciosa*).

† In the neighbouring district of Mymensing, formerly a portion of the province of Dacca, the *dullum kathee* (as this instrument is called), is on a larger scale; there, the iron roller is worked with the feet, which are protected by wooden soles.

soft skin of the *cuchia* fish, which serves as a cover to preserve it from dust and from being soiled, whilst it is held in the hand, during the process of spinning.

All the fine thread is made by Hindoo women. They excel—nay, almost rival Arachne's fabled skill—in spinning; and, doubtless, it is to the delicate organization and fine sensibility of touch with which they are endowed by nature, that their inimitable skill in this art is to be ascribed. They have, as Dr. Cooke Taylor remarks, "a delicacy of touch which apparently compensates for their want of muscular strength beyond any nation on the face of the earth;"* or, as Dr. Ure expresses it, "their temperament possesses every feature of that termed nervous by physiologists."† The finest thread is spun by women generally under thirty years of age. The spinning apparatus, which is usually contained in a small flat work-basket, not unlike the *calathus* of the ancients, comprises the cylindrical roll of cotton (*pūnī*), a delicate iron spindle,‡ a piece of shell embedded in clay, and a little hollow stone containing chalk powder, to which the spinner occasionally applies her fingers. The spindle (*tukū'ā*) is not much thicker than a stout needle. It is from ten to fourteen inches in length; and attached to it near its lower point, is a small ball of unbaked clay about the

* "Hand Book of Silk, Cotton, and Woollen Manufactures," p. 155. Bentley, London, 1843.

† "Cotton Manufacture of Great Britain." Vol. I., p. 13.

‡ In some of the eastern districts of Bengal, and in Assam, the spindle is frequently made of a slender piece of bamboo instead of iron.

size of a pea, to give it sufficient weight in turning.



The spinner holds it in an inclined position, with its point resting in the hollow of the piece of shell, and turns it between the thumb and fore-finger of one hand, while she, at the same time, draws out the single filaments from the roll

of cotton held in the other hand, and twists them into yarn upon the spindle. When a certain quantity of the yarn has been spun and collected on this instrument it is wound from it upon a reed. Dryness of the air prevents the filaments of cotton from being sufficiently attenuated or elongated ; and is, therefore, unfavourable to the spinning of fine yarn. A certain degree of moisture, combined with a temperature of about 82 degrees, is the condition of the atmosphere best suited to the carrying on of this operation. The Dacca spinners generally work from soon after early dawn to nine or ten o'clock, A.M., and from three or four in the afternoon till half an hour before sunset. The finest yarn is spun early in the morning before the rising sun dissipates the dew on the grass ; or, when this is wanting and the air is unusually dry, it is not unfrequently made over a shallow vessel of water, the evaporation from which imparts the necessary degree of moisture to the filaments of cotton, and enables the spinner to form them into thread.

The native weavers commonly judge of the fineness

of yarn by sight alone. They have no rule or standard for the length of the reels, or any instrument by which they can form an estimate of any given weight of thread. The only mode, therefore, of ascertaining the quality of the fine yarn is to weigh the skeins and then measure them on sticks placed in the ground, as in warping, — an operation which requires delicate manipulation, and which few, except the spinners or weavers themselves, can do. Yarn is measured by the *hāth* (cubit), the length of which is stated by the Commercial Resident to be $19\frac{3}{4}$ inches ; and is weighed by the *ruttee*, which is equal to about two grains Troy. The standard quality of the yarn used in the manufacture of the muslins formerly sent to the Court of Delhi is said to have been 150 *hāths* in length to one ruttee in weight ; but what was commonly used varied from 140 to 160 *hāths* in length to the above weight—the yarn of 140 *hāths* being employed for the warp, and that of 160 for the weft, of these fabrics. The finest yarn used in the Dacca looms, in the year 1800, did not exceed 140 cubits in length, to one ruttee in weight. Some, however, is mentioned as having been spun at Sunargong at this time, of the quality of 175 cubits to one ruttee. Yarn much finer than this is made at Dacca in the present day. A skein, which a native weaver measured in my presence in 1846, and which was afterwards carefully weighed, proved to be in the proportion of upwards of 250 miles to the pound of cotton. Several specimens of the yarn used in the Dacca looms are to be seen at the Exhibition. The length of these skeins, some of which only weigh two and a half grains each, has not been ascertained ; but, to all appear-

ance, they are of a quality fully equal to that of the highest numbers used in the manufacture of muslins in Britain. Speaking of the inequality of the yarn in a piece of Dacca muslin, Dr. Cooke Taylor remarks:—"It requires the assistance of the microscope to discover that the sensitive fingers of the Hindoo spinner have failed to produce a thread equal in evenness and regularity to that wrought by the multitudinous rollers of a Manchester factory."* The want of evenness in this case, however, may be attributed to the muslin having been made, as is usually the practice, of thread of several degrees or shades of quality. The fine native hand-spun yarn appears to greater advantage in the skein or on the reed than in the woven state. The specimens at the Exhibition possess great evenness, and have been admired by competent judges, not less for that quality, than for their extreme fineness.

The filaments of cotton present, when viewed with the microscope, the appearance of irregular flimsy ribbons twisted on each other, and are transparent in those parts where they are not doubled. Dacca spun yarn, when examined with this instrument, is said to look like an ill-made hair rope, bristling with loose strands—the filaments varying from $\frac{1}{1000}$ to $\frac{1}{1500}$ of an inch in diameter, and consisting of groups of ribbons intermixed with flattened cylinders.† The short fibres of the Dacca cotton, of which the fine thread is made, are not well adapted to spinning by machinery; while, on the other hand, the long,

* "Hand Book of Silk, Cotton, &c.," p. 155.

† Ure's "Cotton Manufacture of Great Britain." Vol. I., p. 54.

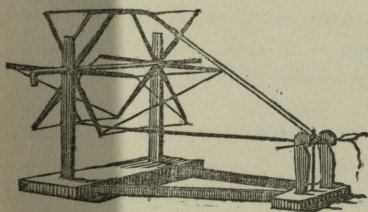
cylindrico-spiral, and more elastic fibres of the American cotton which are best suited to this process, cannot be made into fine yarn with the primitive spindle of the Hindoo. In 1811, a quantity of Sea Island cotton was sent by the Commercial Resident to the different manufacturing stations connected with the Dacca factory for trial, but the spinners were unable to work it into thread, and it was pronounced to be an article unfit for the manufactures of the native looms. The Dacca yarn is said to be softer than mule twist: and, I believe, it is generally admitted, that the fabrics made of it are more durable than muslins manufactured by machinery. This is attributed to its possessing, from the moisture imparted to it by the fingers, greater tension than yarn made by the throstle or mule machine. The tendency of the fibres to expand from moisture is the criterion by which the native weavers judge of the quality of cotton; and it is mentioned by Mr. Bebb, the Commercial Resident in 1789, as the test which then determined the value of this article as raised in different parts of the district.* The cotton which swells the least on bleaching is considered by the weavers as the best, or at least, as the material best suited to the manufacture of fine thread. A common remark among them is, that English yarn swells on bleaching, while Dacca spun thread shrinks and becomes stronger the more frequently it is subjected to that process.

A spinner devoting the whole morning to the spindle can make about a half-sicca or tola weight

* See "Reports on Cotton-wool, Raw-silk, and Indigo." Published by the Court of Directors. Pp. 335, 355, 356.

(ninety grains Troy) of fine thread in a month. This is considered the maximum quantity. But, as spinning is now more a leisure occupation than a professed trade, it is calculated that the average quantity produced in that time, by each of the persons employed in the business, does not much exceed forty-five grains weight. Fine thread is weighed either by a small rude balance (*tula*), on the principle of the Roman steel-yard, or in jewellers' scales—the substances used as weights in the latter case being four barley corns, or a seed of the *abrus precatorius* (*lāl kūnch*) either of which constitutes a *ruttee*. The price of the finest yarn used in the Dacca looms is eight rupees (16s.) per tola weight (180 grains). This is at the rate of about £31 2s. per pound (7,000 grains) avoirdupois, or £3 more than the cost of a pound of the yarn No. 700, spun by Messrs. Houldsworth and Co., of Manchester—a specimen of which is now to be seen at the Exhibition.

The Bhoga cotton, which is used in the manufacture of thread for coarse fabrics, is separated from



the seeds by means of the common hand-mill (*churka*) used throughout India. The wool is then bowed in the manner above

mentioned, and spun into thread with the rude spinning-wheel here represented. There are a few Mahomedan bowers of cotton (*dhunarus*) who have

shops in the town, where they clean cotton which is principally used for stuffing quilts, mattresses, and pillows. The Seronge cotton is generally imported in its clean or bowed state, but the quantity consumed is small—English yarn being now used in the manufacture of the fabrics for which it was formerly required.

CHAPTER IV.

WEAVING.

THE Hindoo weaver is said to erect his loom under the shade of any wide-spreading tree near his house. Having dug a hole large enough to contain his legs, he is represented as stretching out the warp to its full length, by fixing it to four wooden posts driven into the ground, and as setting up or arranging his apparatus by fastening the balances of the heddles to a branch of the tree above, while he attaches to the gear below two looped cords, into which he inserts his great toes, and which he thus uses as treadles. The shuttle is described as resembling a large netting needle, of a length exceeding the breadth of the cloth, and as performing the double office of reed and batten.* "In such looms as this," it is remarked, "are made those admirable muslins whose delicate texture the Europeans can never equal with all their complicated machinery. The weaving of the finest muslins is thus conducted in the open air, exposed to all the intense heat of their climate."† Such is the account commonly

* See "Sonnerat's Voyages," Tennant's "Indian Recreations," Forbes's "Oriental Memoirs."

† "Rees's Cyclopædia"—Weaving.

given of the weaving of muslins as practised by the Hindoos; but, however correct it may be, as regards this art in some parts of India, it certainly is not applicable to the mode of conducting the process at Dacca. Here the weaving of muslins includes several preparatory operations, no mention of which is made in any of the descriptions given of the Indian loom. Forming a series of steps in the process, they may be described, according to the order in which they occur, under the following heads, viz.:—winding and preparing the yarn; warping; applying the reed to the warp; beaming, or applying the warp to the end roll of the loom; preparing the heddles; and lastly, weaving.

WINDING AND PREPARING THE YARN.

The yarn when delivered to the weaver, is wound on small pieces of reed, or made up in the form of small skeins. The first thing that is done is to steep it in this state in water. It is then reeled in the manner



shown in the figure. A piece of stick is passed through the hollow reed and fixed in the cleft end of a piece of bamboo.* The weaver, holding the latter between his toes, draws off the yarn from the reed, which revolves upon the stick through it, and winds it upon the reel, which he holds in the other hand, and whirls round in a small

* See Appendix. Note A.

cup of smooth cocoa-nut shell. When the yarn is in the form of a skein, it is put upon a small wheel made of fine splits of bamboo and thread. This is mounted on the end of a stick upon which it is made to revolve, and as the yarn is thus drawn off, it is wound upon the reel.

The yarn is divided into two portions—viz., a sufficient quantity of the finest of it for the woof (*burna*), and the rest for the warp (*tānā*).

The warp thread is steeped for three days in water, which is twice changed daily. On the fourth day it is, after being rinsed, put upon a small wheel, made of splits of reed and thread, and is then reeled—the stick upon which the wheel is mounted being held between the toes, and the reel turned in the manner above represented. Skeins of a convenient size having been wound off, are steeped in water, and tightly



twisted between two sticks; they are then left upon the sticks and exposed to the sun to dry. They are next untwisted and put into water mixed with fine charcoal powder, lamp black, or soot, scraped from the surface of an earthen cooking vessel.

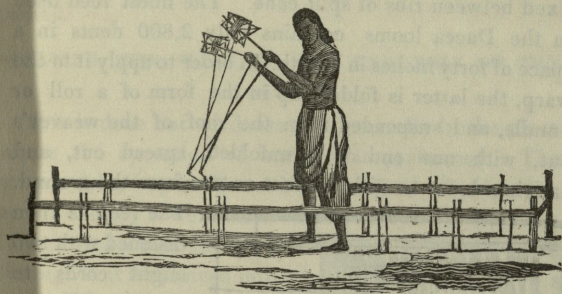
They are kept in this mixture for two days, then rinsed in clear water, wrung out, and hung upon pieces of stick placed in the shade to dry. Each skein having been again reeled is steeped in water for one night, and is next day opened up and spread over a flat board, upon which it is smoothed with the hand, and rubbed over with a paste or size

made of *koie* (paddy or rice, from which the husk has been removed by heated sand), and a small quantity of fine lime mixed with water. Rice, it may be remarked, has formed the basis of the starch used in weaving in India from remote antiquity. "Let a weaver," says Menu, "who has received ten palas of cotton thread, give them back increased to eleven by the *rice water*, and the like used in weaving, &c." (Menu's "Institutes," No. 397.) The skeins after being sized are wound upon large reels, and exposed to the sun—the turns of the thread being widely spread over the surface of the reels in order that they may dry quickly. All the thread is again reeled and sorted, preparatory to warping. It is generally divided into three shades of quality—viz., the finest for the right hand side, the next finest for the left hand side, and the coarsest for the centre, of the warp. Such is the mode of preparing the yarn for the warp of plain muslins. The yarn for the warp of striped or chequered fabrics, is prepared by twisting a certain number of threads together, namely, two for each stripe of the *doorea*, and four for that of the *charkanu* muslin, and then sizing and reeling it in the manner above mentioned.

The yarn for the woof is not prepared till two days previous to the commencement of weaving. A quantity sufficient for one day's work is steeped in water for twenty-four hours. Next day it is rinsed and wound on large reels, and then lightly sized with paste of the same kind as that applied to the warp. From small reels it is wound upon larger ones, and left upon these to dry in the shade. This process of preparing the yarn for the woof is continued daily until the cloth is finished.

WARPING.

This operation is usually performed in a field or any open spot convenient for the work near the weaver's house. For this purpose, four short bamboo posts are fixed in the ground, at measured distances (varying according to the intended length of the cloth), and several pairs of rods placed between them—the whole forming two parallel rows of rods about four feet apart. The weaver holding a small wheel

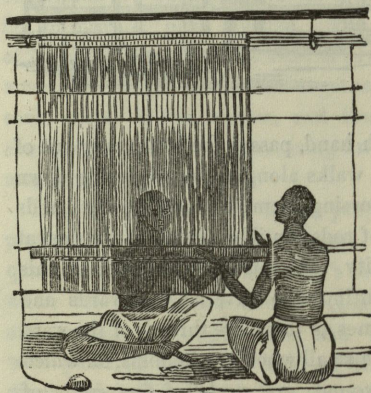


of warp-yarn in each hand, passes the latter over one of the posts, and then walks along the rows, laying down two threads, and crossing them (by crossing his hands between each pair of rods) until he arrives at the post at the opposite extremity. He retraces his steps from this point, and thus continues to traverse backwards and forwards as many times as there are threads of the warp to be laid down. The small wheels or bobbins, on which the warp-yarn is wound, are made of fine splits of bamboo and thread, and are each attached at a right angle to a short handle, at the end of which there

is a *kangch** ring, through which the yarn runs. Two pairs of hand-wheels, one with single, and another with twisted yarn, are used alternately for the warps of striped and chequered muslins.

APPLYING THE REED TO THE WARP.

The reed is generally applied to the warp after the preceding operation; but sometimes it is not attached until the warp has been fastened to the end roll of the loom. It is made of fine splits of bamboo firmly fixed between ribs of split cane. The finest reed used in the Dacca looms contains only 2,800 dents in a space of forty inches in length. In order to apply it to the warp, the latter is folded up in the form of a roll or bundle, and suspended from the roof of the weaver's hut, with one end of it unfolded, spread out, and hanging down to within a foot or two from the ground.



The reed is then fastened with two slight cords to the bundle and lease rods, and hangs in front of the unfolded portion of the warp. Two workmen seat themselves, one on each side of the warp. Having

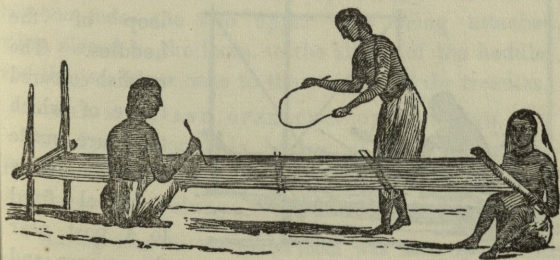
cut with a knife a portion of its end loops, the

* A kind of coarse glass.

man in front passes an iron wire or sley hook through the first division of the reed, to the other workman; and the ends of the two outermost threads being twisted upon it by him, it is drawn back, and the thread thus brought through. In this manner the wire is introduced through all the divisions of the reed in succession, and two threads are drawn through each of them at a time. The ends of the threads are gathered in bunches of five or six and knotted; and through the loops formed by these knots, a small bamboo rod is passed.

APPLYING THE WARP TO THE END ROLL OF THE
LOOM.

This is done out of doors and generally in the place where the operation of warping is performed. The warp is folded upon the reed in the form of a bundle, and is held by a workman. The end of it is then unfolded, and a thin slip of bamboo having been passed through it, it is received into a longitudinal groove in the end roll (yarn beam), and fastened to it with pieces of

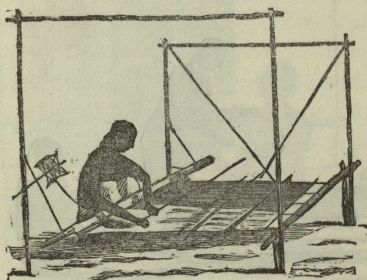


string. The end roll rests in two loops of cord attached

to two posts, and is turned round with a winch. The warp threads are next arranged. The outermost ones are brought to a distance commensurate with the intended breadth of the cloth, and a portion of the warp being unfolded and put upon the stretch by the person who holds the bundle, two workmen proceed to arrange the threads in its middle. They use a small piece of cane, softened and beaten out at one end into the form of a brush, in order to separate the threads from each other, and then gently tap them with an elastic cane, held in the form of a bow, to bring them into a state of parallelism. The portion of the warp which is thus arranged being carefully wound upon the end roll, another portion is then unrolled and similarly prepared.

PREPARING THE HEDDLES.

In order to form the heddles, a portion of the warp behind the reed is unfolded and stretched out horizontally in the same manner as it is in the loom. A broad piece of bamboo is then placed edgewise between the threads of the warp, in order that the weaver may have



sufficient room to form the loop of the heddles. The reddish coloured twine of which they are made is unwound from a wheel fixed to a post near the weaver and

being passed between the separated threads of the

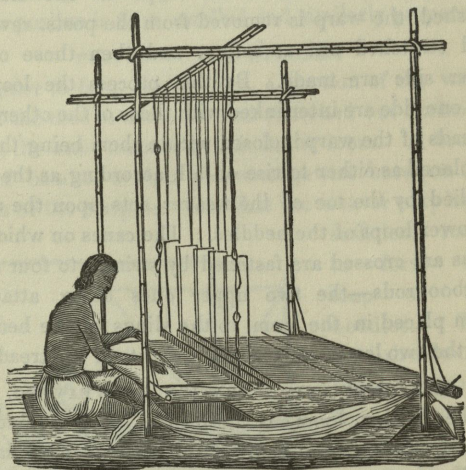
warp to the opposite side, it is fastened to a cane to which is attached an oval piece of wood about eight inches in length. The weaver then dips two fingers between the outermost thread of the warp and the one next to it, and brings up a fold or loop of the coloured string which passes upon the inside of the oval piece of wood and is crossed round the cane above. The same process is repeated between every two threads of the warp—the cane and oval piece of wood being gradually moved across the warp as the work proceeds. As two sets of loops are made on each side of the warp, two workmen are generally employed at the same time in forming them. When the loops of one side are finished, the warp is removed from the posts, reversed, and stretched out as before, and then those of the other side are made. By this process the loops of the one side are interlinked with those of the other—the threads of the warp inclosed within them being thereby so placed as either to rise or fall, according as the force applied by the toe of the weaver acts upon the upper or lower loops of the heddles. The canes on which the loops are crossed are fastened by strings, to four small bamboo rods—the two upper ones being attached, when placed in the loom, to the slings of the heddles, and the two lower ones to the weights of the treadles.

THE LOOM AND OPERATION OF WEAVING.

The Indian loom is horizontal, and is said by Heeren to resemble that of the ancient Egyptians.* At Dacca it is always erected under a roof—either

* Among them the horizontal loom was used by the men, and the upright one by the women. Instead of a reed, they used a bar of metal, as the Greeks and Romans employed a *spatha*, to drive home the weft.

that of the weaver's house, or the cover of a shed built for the purpose. Its lateral standards are four bamboo posts firmly fixed in the ground. They are connected above by side-pieces which support the transverse rods, to which the slings of the lay or batten, and the balances of the heddles, are attached. The warp wound on the end roll (or yarn beam), and having the reed and heddles attached to it, is brought to the loom and fixed to the breast roll (or cloth beam) by a small slip of bamboo, which is passed through the loops of the warp, and received into a longitudinal groove in the beam. Both the end and breast rolls rest either in



scooped shoulder posts, or in strong looped cords attached to the four lateral standards. They are turned round with a winch, and prevented from moving in the opposite direction by a piece of stick, one end of

which is inserted into a mortise in the end of the roll, and the other fixed in the ground. The lay or batten consists of two broad flat pieces of wood, grooved on their inner edges for the reception of the reed, which is fixed in its place by iron or wooden pins passed through the ends of the lay. It is suspended from the transverse rod (the counterpart of the cape) above by slings passing through several pieces of sawn shell. By altering the distance between these segments of shell, which is done by lengthening or shortening the intermediate slings, the range of motion of the lay is increased or diminished. The extent of this range of motion regulates, in a great measure, the degree of force which is applied to the weft in weaving; and, as it is necessary to adapt this to the particular texture of the fabric which is to be made, the proper adjustment of this part of the apparatus requires considerable care, and is considered by the weavers as one of the nicest operations connected with the loom. The balances of the heddles, having the slings of the latter attached to their extremities, are equally poised and suspended from the transverse rod above. The treadles are made of pieces of bamboo, and are contained in a pit dug in the ground, of about three feet in length, by two in breadth, and one and a half in depth. The shuttle is made of the light wood of the betel-nut tree (*Areca catechu*), and has spear-shaped iron points. It is from ten to fourteen inches in length, and three quarters of an inch in breadth, and weighs about two ounces. It has a long open space in its centre, in which is longitudinally placed



a moveable iron wire, upon which the reed of the weft revolves—the thread passing, as it is thrown off from the latter, through an eye in the side of the shuttle. The temple, or instrument for keeping the cloth on the stretch during the process of weaving, is formed of two rods connected together with cord, and armed at their outer ends with two brass hooks or pins, which are inserted into the edges of the cloth on its under surface.

The apparatus of the loom being all adjusted, the weaver proceeds to work in the manner shown in the figure. He sits with his right leg bent under him, upon a board or mat placed close to the edge of the pit, and depressing one of the treadles with the great toe of the left foot, and thus forming the shed in the warp above, he passes the shuttle with a slight jerk from one hand to the other and then strikes home each shot of the weft with the lay. In performing these operations the Hindoo possesses unrivalled skill. Like most of the native artisans of Bengal, the Dacca weaver is of a slender and somewhat delicate form of body. Deficient in physical strength and energy, he is, on the other hand, endowed with fine sensibility of touch, and a nice perception of weight; while he possesses that singular command of muscular action which enables him to use his toes with almost as great effect as his fingers in the exercise of his art. "The rigid clumsy fingers of a European," says Orme, "would scarcely be able to make a piece of canvass with the instruments which are all that an Indian employs in making a piece of cambric."* The

* Fine muslin is meant.

stretch of the warp in the loom seldom exceeds one yard in length; and the depth of the shed is generally about seven-eighths of an inch. To lessen friction on the threads of the warp during the process of weaving, the shuttle, reed, and lay are all oiled; and to prevent the desiccation of the former in very dry hot weather, a brush made of a tuft of fibres of the *nul* plant (*Arundo karka*) and smeared with mustard oil, is occasionally drawn lightly along their extended surface. When a portion of the cloth, to the extent of ten or twelve inches, is finished, it is, in order to preserve it from being injured by insects, sprinkled with lime-water, and then rolled upon the cloth-beam, and a portion of the warp unwound from the yarn-beam at the opposite end of the loom. The condition of the atmosphere most favourable to the manufacture of fine muslins, is that of a temperature of about 82 degrees combined with moisture. The heat and dazzling glare of the sun's rays at mid-day are generally too powerful to admit of the process being carried on at that time, and hence it is the practice among the weavers to work only in the morning and afternoon. The best season for weaving fine muslins is during the months of Assar, Sawan, and Bhadun (from the 13th of May to the 14th of August.) In very dry hot weather it is sometimes necessary, during the operation of weaving, to place beneath the extended yarns of the warp in the loom a few shallow vessels of water, the evaporation from which keeps the threads moist and prevents them from breaking. Doubtless, it is this practice which has given rise to the erroneous notion that Dacca muslins are sometimes

woven under water.* The time required for the manufacture of a piece of muslin of the usual dimensions (twenty yards in length by one in breadth) necessarily depends on the quality of the fabric, and the expertness of the weaver employed in making it. In this latter respect there exists great diversity—natural aptitude, hereditary instruction, and constant practice enabling individuals, as they possess these several advantages to a greater or less extent, to attain to different degrees of excellence in the art.† In general, the weavers of the different manufacturing stations of the district confine their industry to the weaving of certain kinds of fabrics; but, notwithstanding the degree of tact and manual dexterity suited to their particular work, which they thus acquire from this subdivision of the business, there is yet a considerable difference displayed by the workmen in each department, both in regard to the quantity of work of a certain quality which they are individually capable

* "On viewing," says Dr. Ure, "the Indian yarn, it is easy to see how from the want of cohesion it should require to be woven on some occasions under water, in order to give it support, as the anatomist developes flimsy textures while afloat in the same medium." (Ure's "Cotton Manufacture of Great Britain." Vol. I., p. 46.)

† Mr. White observes that the number of good hand-weavers, in a modified sense, in Great Britain is very small. "There may be," he says, "in the Glasgow district—that is, throughout Scotland—some six or seven in the muslin department coming under this description; and in the same line about Manchester, perhaps one. There is under these a considerable class, respectable in their mode of working; and below them, the great body of weavers, but of them there is a large proportion who are not, nor ever can be weavers—are mere labourers." ("White on Weaving," 1846.)

of producing, and the length of time which they require for doing it. On the subject of the time usually occupied in weaving different fabrics, the Commercial Resident states :—"The preparation of the *tānā* or warp thread of a full piece of plain or striped cloth of the Dacca station employs two men, according to the quality of the thread, from ten to thirty days. The weaving of such cloth employs two persons, one to weave, the other to prepare thread and attend the loom—if of the ordinary or middling plain assortments, from ten to fifteen days—if of the fine, twenty—the superfine, thirty—the fine superfine, from forty to forty-five—and if the cloth be of the fine superfine *dooreas* or *charkana* assortments, sixty days. At other stations, where cloths of higher or less value are made, the time requisite for manufacturing them is proportionally increased or diminished. A half piece of *mulmul khas* or of *Circar Ali* of the finest kind, costing from seventy to eighty rupees, cannot be manufactured in less than five or six months. A whole piece of Narainpore *jehazy* muslin, costing two rupees, can be made in the course of eight days."

MODE OF WEAVING FLOWERED MUSLINS.

In manufacturing figured (*jamdanee*) fabrics, two weavers sit at the loom. They place the pattern, drawn upon paper, below the warp, and range along the track of the woof a number of cut threads equal to the flowers or parts of the design intended to be made; and then, with two small fine-pointed bamboo sticks, they draw each of these threads between as many threads of the warp as may be equal to the width of the figure which is to be formed. When all the threads

have been brought between the warp, they are drawn close by a stroke of the lay. The shuttle is then passed by one of the weavers through the shed, and the weft having been driven home, it is returned by the other weaver. The weavers resume their work with their pointed bamboo sticks, and repeat the operations with the lay and shuttle in the manner above described—observing each time to pass the flower threads between a greater or less number of the threads of the warp, in proportion to the size of the design to be formed.

CHAPTER V.

CLOTHS.

THE productions of the Dacca looms consist of fabrics of various degrees of quality—ranging from the fine gossamer muslin, the attire of the inmates of the zananas of native princes, down to the coarse thick wrapper worn by the poor ryot. They may be classified under these general heads—viz., muslins; cloths of ordinary or medium quality; cloths made of thread of a quality inferior to English yarn, No. 30; and mixed fabrics of cotton and *muga* silk.

The muslins comprise plain, striped, chequered, figured, and coloured varieties, and are distinguished by names which either denote fineness or transparency of texture, or refer to the origin of their manufacture, their patterns, or the uses to which they are applied as articles of dress. Many of the names thus derived—as *mulmul*, *tanjeb*, *nainsook*, &c.—were formerly employed to designate the muslins manufactured in this country. The common dimensions of a piece of Dacca muslin are twenty yards in length by one in breadth. The number of threads in the warp is reckoned by the number of dents in the reed used in weaving the fabric; but, as two threads pass through each division of this instrument, the actual number is twice that expressed by the weavers. There are more threads in the warp than in the woof—the latter being to the former, in a

piece of muslin weighing twenty tolas or siccas, in the proportion of nine to eleven. One end of the warp is generally fringed, four or five threads being twisted together and knotted; and in this respect, it may be remarked, the Dacca muslins resemble the mummy-cloths of Egypt, both ends of which have frequently fringed borders, not unlike those of a shawl. The value of a piece of plain muslin is estimated by its length, and the number of threads in the warp, compared with its weight. The greater the length and number of threads, and the less the weight of the piece, the higher is its price. It is seldom, however, that a web of the finest muslin consists wholly of the finest thread which it is possible to spin. It is often difficult to procure a sufficient quantity of this article for the loom; and hence it is a common practice among the weavers to manufacture a piece of what is called the finest muslin of thread of three or more degrees or shades of quality. The Commercial Resident in the year 1800, mentions that no cloth is ever made at Dacca of thread of one quality only; and, referring in particular to a piece of muslin weighing twelve and a half siccas, he states that three siccas weight of it consisted of thread at three rupees per sicca weight, eight at two and a half, and two at two rupees per sicca weight, leaving a half sicca weight for waste. Each variety of muslins comprises fabrics of three or four assortments or degrees of quality, which were formerly distinguished at the Company's factory by the terms "ordinary," "fine," "superfine," and "fine superfine." The principal varieties now manufactured are, viz. :—

Mulmul khas (signifying literally muslin made or reserved for the particular or private use of the king) has from 1,800 to 1,900 threads in the warp, and is generally manufactured in half-pieces, each measuring ten yards in length by one in breadth. A specimen of it, of these dimensions, and weighing only 8 tolas 6 annas = 3 oz. 2 dwt. 14 grs. Troy, is to be seen at the Exhibition. It is described as so fine that "it will pass through the smallest ring." Price, 100 rupees (£10). The class of *mulmuls* includes muslins of various degrees of quality, and differing greatly in price.

Jhūnā (probably derived from the Hindee word *jhīnā*, "fine" or "thin") is a gauze or net-like muslin. Dimensions, 20 yards by 1; number of threads in the warp, 1,000; weight, $8\frac{1}{2}$ oz. This fabric is worn only by native dancers and singers, and by the inmates of the *zananas* or seraglios of wealthy natives, for whose use it is specially manufactured. It is referred to in an ancient Tibetan work, entitled "The Dulva," wherein it is mentioned as having been worn by a Buddhist priestess or nun:—"The king of Kalingu sends to the king of Kosala a piece of fine linen* cloth, as a present. It comes afterwards into the hands of Gtsug-Dgah-mo (a wicked priestess), she puts it on, appears in public, but from its thin texture seems to be naked." "The priestesses," it is further stated, "are prohibited from accepting or wearing such thin clothes."† It is also noticed by

* Cotton.

† "Analysis of the Dulva." By A. Csoma Korosi, in Res. Asiatic Society of Calcutta. Vol. XX., part 1, page 85.

Tavernier, as an article of manufacture at Seronje in the 17th century. He describes it as "a sort of calicut, which is so thin that when a man puts it on, his skin shall appear through it as if he were naked. The merchants are not permitted to transport it; for the governor sends it all to the seraglio of the Great Mogul, and to the principal lords of the court. Of this the sultanesses and the great noblemen's wives make them garments in the hot weather. And the king and the lords take great pleasure to behold them dance in these garments."*

Rang is a muslin which resembles the *jhūna* in its transparent gauze, or net-like texture. It is made by passing a single thread of the warp through each division of the reed. Dimensions, 20 yards by 1; number of threads in the warp, 1,200; weight, 8 oz. 4 drs.

Abrawān is a fabric which possesses a very thin texture, the translucency of which is fancifully compared by the natives to that of limpid running water. Hence its name, which is derived from the Persian words *āb*, "water," and *rawān*, "to flow." Dimensions, 20 yards by 1; number of threads in the warp, 700 to 1,400; weight, 9 to 11½ oz. "The Hindoos," says Mr. Bolts, "amuse us with two stories, as instances of the fineness of this muslin. One, that the Emperor Aurengzebe was angry with his daughter for showing her skin through her clothes; whereupon the young princess remonstrated in her justification, that she had seven *jamahs* or suits on;

* "Tavernier's Travels." Translated by J. P. London, 1684. Part II., book 1., chap. xi.

and another, that in the Nabob Allaverdy Khawn's time a weaver was chastised and turned out of the city of Dacca for his neglect, in not preventing his cow from eating up a piece of *abrooan*, which he had spread and carelessly left on the grass."*

Circar Ali is a muslin of a close but delicate texture, which was formerly manufactured for the use of the Nawaubs of the province. It was included among the articles for the viceregal court, the cost of which was defrayed from the revenues of the jaghire "*Circar Ali*," and hence its name. Dimensions, 10 yards by 1; number of threads in the warp, 1,900; weight, 4 to $4\frac{1}{2}$ oz.

Khasa (apparently derived from the Persian word *khasu*, "fine" or "elegant") is a muslin also of a fine close texture. Abul Fazel mentions it about the end of the 16th century, under the name of *cossac*, as a manufacture for which Sunargong was then celebrated. The finest variety of it is called *jungle-khasu*. Dimensions, 20 yards by 1 or $1\frac{1}{2}$; number of threads in the warp, 1,400 to 2,800; weight of a piece with the latter number, 21 oz.

Shubnam is a thin pellucid muslin to which the Persian figurative name of "evening dew" is given—this fabric being, when spread over the bleaching field, scarcely distinguishable from the dew on the grass. Dimensions, 20 yards by 1; number of threads in the warp, 700 to 1,300; weight, 10 to 13 oz.

Alaballee (signifying, according to the weavers' interpretation of the word, "very fine,") is a muslin of a close texture. Dimensions, 20 yards by 1; number

* Bolts' "Considerations on the Affairs of India." Page 206.

of threads in the warp, 1,100 to 1,900; weight of a piece with the latter number of threads, about 17 oz. This muslin is apparently the cloth called *abollai* in the "Sequel to the Periplus of the Erythrean Sea." Dr. Vincent supposes this Greek word to have been borrowed from the Latin *abolla*, "a military cloak," but as the term is applied by Arrian to an Indian, and in all probability, therefore, to a cotton fabric, it is not unlikely that it applies to this muslin.

Tunzeb ("the ornament of the body," the name being derived from the Persian words *tun*, "the body," and *zeb*, an ornament) is a muslin which is known in England by the name of *tanjeb*. Dimensions, 20 yards by 1; number of threads in the warp, 800 to 1,900; weight, 10 to 18 oz.

Turundam (said by the weavers to mean "a kind of cloth for the body," the name being derived, according to them, from the Arabic word *turuh*, "a kind," and the Persian one *undam*, "the body,") is a muslin which was formerly imported, under the name of *terendam* into this country. Dimensions, 20 yards by 1; number of threads in the warp, 1,000 to 2,700; weight, from 15 to 27 oz.

Nyansook is a thick muslin, apparently identical with the fabric called *tunsook* in the Ageen Akbery and which is there mentioned as ranging in price from 4 to 80 rupees per piece. Dimensions, 20 yards by $1\frac{1}{2}$; number of threads in the warp, 2,200 to 2,700.

Buddun Khas, a fine muslin, the weft of which is not so close as that of the *nyansook*. Dimensions, 10 to 24 yards, by $1\frac{1}{2}$; number of threads in the warp, 2,200; weight, about 12 oz.

Surbund (from *sur* "the head" and *bandhna* "to

bind"), a muslin worn as a turban; dimensions—20 to 24 yards, by $\frac{1}{2}$ to 1; number of threads in the warp, 2,100; weight, about 12 oz.

Surbutee (signifying, twisted or coiled round the head), is a muslin that is worn as a turban after this fashion. Its dimensions, number of threads in the warp, and weight, are the same as those of the *surbund*.

Kumees (derived from the Arabic word *qumees* "a shirt") is a muslin that is used to make the Mahomedan dress called *koorta*—a garment reaching down almost to the ankles, and put on in the manner of a shirt. Dimensions, 20 yards by 1; number of threads in the warp, 1,400; weight, about 10 oz.

Dooreea is a striped muslin which derives its name, according to the weavers' interpretation of the word, from each thread in the stripes being composed of two threads twisted together. These threads are generally made of a variety of cotton called *banga*, or of *seronge*. Dimensions, 10 to 20 yards, by 1 to $1\frac{1}{2}$; number of threads in the warp, 1,500 to 2,100.

Charkanu is a chequered muslin, as its name implies. Dimensions, and number of threads in the warp, are the same as those of the *doorea*. Both *doorea* and *charkanu* are of different patterns as regards the size or breadth of the stripes, their closeness to each other, and the size of the squares. These muslins were probably included among the Indian cloths called *diakrossia* in the "Periplus of the Erythrean Sea"—a term which is rendered "striped" by Apollonius.

Jamdanee (a Persian name applied to cloths embroidered in the loom) comprises a great variety of figured muslins. The thread of which they are made is generally of a quality equal to No. 200 or No.

250 English yarn. The maximum number of threads in the warp is 1,700. The *jamandee* muslins, from the complicated designs formerly wrought upon them, were the most expensive productions of the Dacca looms. Those manufactured for the Emperor Aurengzebe cost 250 rupees (£31); and it is said that in the time of Mahomed Reza Khan, the Naib Nazim of Dacca in 1776, some were woven at 450 rupees (£56) per piece. These muslins probably belonged to the class of cloths called *skotulatos* in the "Periplus," a term rendered "cloths wrought with figures."

Muslins have been manufactured in India from remote antiquity; but of their very early history, as articles of dress in foreign countries, little is known. The interpretations, however, which some writers give to certain words in Scripture, would seem to indicate that these fabrics were worn in Palestine and adjacent countries, about six centuries before the Christian era. The term *meshi*, rendered "silk" in Ezekiel (ch. xvi., 10, 13), is supposed by a learned writer to signify "a veil or mesh of reticulated threads," or, as he says, it "more probably meant *cotton* or rather *muslin*."* And the word translated "glasses" in Isaiah (ch. iii., 23) is regarded by some profound critics, as Bishop Lowth, Dr. Stock, and Mr. Dodson as meaning "transparent garments,"† described as resembling gauze in thinness of texture and as "worn only by the most delicate women, or such as preferred elegance to decency of habit."‡ The commodities of India, it is

* Harris's "Natural History of the Bible."

† Idem.

‡ Idem.

well known, were brought to Palestine at a very remote period. Onycha,* cassia,† and cinnamon,‡ all productions of the regions of the East, were used in the services of the sanctuary in the days of Moses; and fragrant aloe-wood,|| which is only found in Trans-Gangetic India and Cochin China, was employed by the Jews in the time of Solomon, as it is by Mahomedans at the present day, to perfume garments and apartments. South Arabia possessed, from a period even prior to authentic history, a monopoly of the trade with India, and was, at the time in which the prophet Ezekiel flourished, the principal commercial channel through which the spices, incense, and other productions of that country, were conveyed to Egypt,§ Phœnicia, and countries bordering on the Mediterranean. Dr. Vincent conjectures that “the chests of rich apparel bound with cords, and made of cedar” (Ezekiel xxvii, 23, 24), mentioned as forming a part of the merchandise brought to Tyre by the merchants of Sheba, Asshur, and Chilmad, were “original Indian packages.” At this period (B.C. 588), when the former city was in the zenith of its commercial prosperity, and, indeed, for many centuries anterior to it, the people of India were far advanced in the arts of

* Exodus, xxx., 34.

† Idem, xxx., 24.

‡ Idem, xxx., 23.

|| Lign-aloes. Numbers, xxiv., 6—Psalms, xlv. 8.—Canticles, iv., 14.

§ That the productions of India were brought to Egypt in remote times, is evident, as Wilkinson observes, from the fact of amethysts, hæmatite, and lapis lazuli, being found at Thebes, of the time of Thotmes and succeeding Pharaohs. — Vide “Wilkinson’s Ancient Egyptians.” Vol. III., page 217.

civilised life, and supplied foreign nations with the products of their industry. We are informed by Professor H. H. Wilson, that three thousand years ago the Hindoos were "a manufacturing people; for the art of weaving, the labours of the carpenter, and the fabrication of golden and of iron mail are alluded to: and what is more remarkable, they were a maritime and a mercantile people."*

It is supposed by Mr. Yates that cotton cloths, imported from India, were used in Greece about 200 years before Christ.† Transparent garments are frequently alluded to by the philosophers of the latter country, and satirists of Rome; and, from what is said regarding them they appear, like the *jhūnā* muslin of India, to have been worn chiefly by the effeminate and dissolute. The pellucid robe or vesture mentioned by Juvenal, under the term *multitia*,‡ is now generally supposed to have been thin transparent muslin. It is said that the Dacca muslin was formerly made possessing such fineness and tenuity of texture that a piece of it measuring several yards in length, could be blown by the breath into the air like a feather. Hence, perhaps, the origin of the figurative name of "*ventus textilis*," which was given by the ancients to this fabric:—

"Equum est induere nuptam ventum textilem."

PETRON, 55.

Descending, however, from conjecture to history, we find particular mention of the muslins of Bengal, in the

* See Introduction to the "Rig-Veda-Sanhita:" a Collection of Ancient Hindoo Hymns. Translated from the original Sanscrit by H. H. Wilson. Page 41.

† "Textrinum Antiquorum" (l.c., page 341).

‡ "Juvenal Sat.," ii., 65.

"Periplus of the Erythrean Sea"—a nautical journal ascribed to Arrian, an Egyptian Greek, who lived, it is supposed, in the second, or early in the third century of the Christian era. They are there described as *Σινδόνες αἱ διαφορώταται αἱ Γαγγητικαὶ λεγόμεναι*—rendered by Dr. Vincent, "the Gangetic muslins, which are the finest manufacture of the sort."* In this work, the term *καρπασος* is applied both to raw cotton and fine muslins, and is thus used in the same sense as *carbasus* is employed by Latin writers (Lucan, Lib. iii., 239; Quintus Curtius, Lib. viii., 9). The Sanscrit *karpāsa* is the origin of these terms, and of the names of cotton in several other languages, as the Hebrew *karpas*, the Persian *karbas*, and the Hindee *kapas*. *Karpas* occurs in the Book of Esther (ch. i., v. 6). It corresponds to *green* in our version,† but is supposed by Scheuchzer, in his "Physica Sacra," to mean cloth made of asbestos. It, however, evidently applies to cotton, and has reference, in all probability, to the "cords of fine linen" mentioned in the same verse, or, as these words may be regarded as signifying, *cords of cotton*, such as are made in India at the present day, and commonly used there to fasten canopies, screens, and curtains.‡

* Vincent's "Sequel to the Periplus of the Erythrean Sea."

† Royle.—See Kitto's "Cyclopædia of Biblical Literature."

‡ It is likely that the cords attached to the "white, green, and blue hangings" in the court of the garden of Ahasuerus's palace resembled the cords or ropes mentioned by Tavernier, in his account of the pavilions erected at Delhi, on the occasion of the great annual festival, at which the Mogul Emperor was weighed. He describes these pavilions as covering the open spaces of the two great courts of the palace. They were

The Two Mahomedan Travellers of the ninth century, in describing the kingdom of Rami (Bengal), particularly mention the fine muslins that were manufactured there:—"In this same country they make cotton garments in so extraordinary a manner, that nowhere else are the like to be seen. These garments are for the most part round, and wove to that degree of fineness that they may be drawn through a ring of middling size."* This mode of showing the fineness of a piece of muslin, namely, by drawing it through a signet ring, is still practised at Dacca, as may be seen from the label attached to the specimen of *mulmul khas* now shown at the Exhibition, wherein it is mentioned by the weaver as the test of the extreme tenuity of this fabric.

From the ninth to the sixteenth century scarcely any mention is made of the muslins of Bengal. About the year 1516, Barbosa informs us that the plain and striped fabrics were held in high estimation. And we learn from the "Mohit," written about the year 1560, that "the finest muslin turbans, the very best *jutar*, and most precious Indian stuffs come from Bengal—the finest muslin sashes, called *malmal*, and the most pre-

formed of purple velvet, embroidered with gold, and were supported byposts of the size of the masts of a ship, and forty feet in height—some of them covered with silver, others with gold, of the thickness of a ducat. He mentions:—"The cords are of cotton of divers colours—some of them as big as a good cable."—"Tavernier's Travels." Translated by J. P. London, 1684. Part II., book ii., chap. viii.

* "Accounts of India and China." By Two Mahomedan Travellers of the ninth century. Translated by the Abbé Renadout.

cious of them *malmal shahi*."* The latter name signifies "royal muslins," and is, therefore, synonymous with *mulmul khas*. Ralph Fitch, the first English traveller who visited the eastern part of Bengal, bears testimony, in the year 1586, to the cotton cloths of Sinnergan (Sunargong) as being the finest that were made in all India.† And Linschoten, in his account of the same country in 1599, remarks:—"Much cotton linen is made there, which is very fine and much esteemed in India, and not only spread abroad and carried into India, and all the east parts, but also into Portugal and other places. It is of various sorts, and called *sarampuras*, *cassas*, *comsas*, *beatillias*, *satopossas*, and a thousand like names."‡ The Empress Noor Jehan is said to have specially patronised the manufactures of Bengal. The Dacca muslins and silks of Malda constituted in her time the principal articles of dress, both male and female, at the Imperial court; and their fineness, it is remarked, was "such as cannot now be imitated."|| Tavernier describes the Indian muslin as being so thin and light, as "scarcely to be felt in the hand; for they will spin the thread so fine that the eye can hardly discern it, or, at least, it seems to be but a cobweb."§ Fabrics of this description were chiefly prepared for the Court of Delhi, or as

* "A Turkish Nautical Journal:" By Sidi Capudan. Translated by J. Van Hammer Baron Purgstall. See "Journal of Asiatic Society of Calcutta." Vol. V, page 467.

† See "Hakluyt's Collection of Travels and Voyages."

‡ "Travels of John Huighen Van Linschoten." Translated by John Wolfe. Chap. xvi.

|| Stewart's "History of Bengal," page 222.

§ "Tavernier's Travels."

presents to persons of distinction. The *mulboos khas* (royal apparel) which the Governor of Bengal presented annually to the Emperor Aurengzebe was principally composed of muslins of this quality. The manufacturing skill of the province was monopolised in their production, and such was the amount of labour expended on them that, according to Orme, "they cost ten times the price of any linens* permitted to be made for Europeans or any one else in the kingdom."†

The accounts, however, which are given of the particular quality or degree of fineness of these fabrics differ greatly. Mr. Bolts states that the muslins made for the Mogul court were, according to the accounts of the Hindoos, incomparably finer than anything of the kind produced in his time (1772), and mentions, as an instance, the *abrawan*, which, he says, was manufactured exclusively for the seraglio of Aurengzebe.‡ A piece of this muslin is said to have weighed only five siccas, and to have cost 400 Arcot rupees (£50). On the other hand, the Commercial Resident of Dacca, in 1800, informs us that, from the result of inquiries instituted by him, he was led to infer that the finest plain fabrics made for the Court of Delhi cost only 200 Arcot rupees per piece. Two to three hundred pieces at this price were sent annually to the Emperor. "The weight," says the Resident, "of such *mulboos khas* muslin I have not been

* Muslins.

† Orme's "Historical Fragments of the Mogul Empire." Vol. IV., page 412.

‡ Bolts's "Considerations on Indian Affairs," page 206.

able satisfactorily to ascertain. But from the information communicated to me I conjecture that the weight of a half piece (twenty cubits in length and one in breadth) was from ten to eleven siccas—the warp consisting of from five and a half to six, and the woof from four and a half to five siccas. The *tānā* or warp is said to have consisted of 1,800 threads, the same in number though of much superior fineness as are now put into the finest *mulmul khas*. The *burna* or woof, still finer, is said to have been much less closely woven than the *burna* of the finest *mulmul khas* now made.”* The finest muslin manufactured in the year 1800 (the period here referred to by the Resident) had 1,800 threads in the warp, weighed twelve and half siccas (five ounces) per half piece, and cost eighty sicca rupees. “Plain muslins,” he remarks, “of greater intrinsic value than this are not procurable at this time.” He mentions that with the view of ascertaining the extent of perfection to which the muslin manufacture could be brought, he employed, in the year 1790, several weavers of Junglebaree, selected on account of their superior skill, to make three pieces of *mulmul khas*, *jungle khasa*, and *circar ali* of the finest quality which it was possible to produce. He states:—“For the convenience of the weavers, the improvement of the cloths, and to save time, as I was told it would take twelve months to make a full piece of such cloth, the weavers not being able to work it during the middle of the day, I directed that the cloths should be made of quarter pieces; and, in order that there might be no deficiency

* “Letter from the Commercial Resident of Dacca to the Board of Trade, Calcutta.” Dated Nov. 30, 1800.

of encouragement to induce the weavers to make every exertion in their power to meet my wishes, I settled the price of each piece at 200 Arcot rupees, and paid the whole 600 rupees* to the weavers in advance. The weavers, on their part, gave the strongest assurance that the cloths should be at least equal to the muslins which used to be sent to Delhi. At the end of three or four months I received the cloths, which, though certainly extremely fine, appeared to the best judges of cloths at the factory to be by no means equal to the sum paid for them, and they proved inferior to some *mulmul khas* which I afterwards had made at Sunargong, at the price of one hundred and sixty rupees per whole piece." Speaking of a half-piece of the finest muslin—viz., one of 1,800 threads in the warp, twelve and a half siccas in weight, and eighty rupees in price—which he had procured at this time, he states :—"If the whole of this half-piece had been made of the finest thread, the cost of thread at the rate of three sicca rupees per sicca weight would have amounted to about thirty-nine rupees (as half a sicca weight of thread is estimated to be lost by wastage in weaving the cloth), which would have left the weaver forty-one rupees profit. This profit, considering the singular beauty of the fabric, the extraordinary skill requisite in manufacturing it, and the length of time (six months) which it took to make the cloth, appears to be below rather than above the weaver's desert, and it is less even than what the weavers are understood to make by several other high-priced assortments of this province; but it is well-known that no cloth is ever made

* £75.

of thread of one quality only, and of the cloth in question it was supposed that three siccas weight consisted only of the first sort of thread of three rupees, eight siccas weight of thread of two rupees and a half, and two siccas of thread of two rupees per sicca weight, which makes the profit of the weaver forty-seven rupees for himself and two assistants for six months."

The muslin made at present, such as the fine specimens displayed at the Exhibition, is superior to the manufacture of 1790, and fully equal to that, as described by the Commercial Resident, of the reign of the Emperor Aurengzebe. This may be seen from the following comparative statement of the length, breadth, number of threads in the warp, weight, and price of a half-piece of the finest *mulmul khas* made at each of these periods:—

Date of Manufacture.	Length.	Breadth.	Number of Threads in the Warp.	Weight.	Price.
Reign of Aurengzebe in the 17th century	20 cubits (each $19\frac{3}{4}$ in.) = 10 yards and 35 inches	2 cubits (each $19\frac{3}{4}$ in.) = 1 yard and $3\frac{1}{2}$ inches	1,800	10 siccas	100 Arcot rupees.
1790 and 1800	ditto	ditto			
1850	10 yards	1 yard			
			ditto	$12\frac{1}{2}$ do.	80 Sicca rupees.
			ditto	$8\frac{1}{2}$ do.	100 Company's do.

These details, as well as the numerous beautiful specimens of the fabrics themselves, now to be seen at the Exhibition, afford ample proof of the fineness of the muslins manufactured at Dacca in the present day. It has often been alleged that since the decline of the cotton manufacture of Bengal and the cessation of the foreign trade of Dacca, this branch of industry has become extinct. The finest muslins, however, formed but a small portion of the goods formerly exported to England, and the decay of the Dacca trade, therefore, has had no influence on this manufacture, regarded merely as a branch of textile art. The Commercial Resident states that, until the year 1792 the Dacca factory never provided for exportation cloths of a higher value than 50 rupees (£6 5s.) per whole piece, and that after that date generally about 150 half-pieces, at the rate of 100 rupees per whole piece, were included in the investment. Occasionally a few pieces of the finest sort found their way through the channel of private trade to England, and were sold at extravagant prices, but the quantity thus exported appears to have been inconsiderable. The very fine muslins of Dacca have always been made to order, and chiefly for persons of rank and wealth in India; and though the demand for them of late years has been extremely limited, compared with what it was in the time of the Mogul court, it has yet proved sufficient to preserve the art of making them from falling into disuse. These delicate fabrics still maintain their celebrity in that country, and are still considered worthy of being included among the most acceptable gifts that can be offered to her native princes.

The Resident mentions that, with the exception of the finest *mulmul khas*, such as that just mentioned, “all the other fabrics of the province whether plain, striped, chequered, or flowered, in all above a hundred assortments, are, I am of opinion, upon the whole, fully equal, and in many instances superior at this time (1800) to what they used to be in any period of the Mogul government; and if, in some assortments, as I believe is the case, there is an inferiority of fineness in the *tānā* or warp, it is counterbalanced by the superior fineness and greater evenness of the *burna* or woof thread.” The reasons he gives for this opinion are :—“ 1st. A certain demand for all these articles has been annually kept up, which, whilst for many years past, it has not been so great as to produce relaxation of care on the part of the spinners or weavers employed, has yet been sufficient to prevent any loss of skill either in the preparation of the thread or in the manufacture of the cloth, and a constant attention to the improvement of the fabrics has, in the meantime, been given by the Company’s servants intrusted with the provision of the Company’s investment at this factory. 2nd. Under the Mogul government the demand for cloths appears to have been much greater than it has been since, at least for a great number of years. The Dallāls, through whom all cloths, excepting the finest, were provided, were, probably on account of the demand, much more attentive to increase the quantity than to improve the quality of the fabrics. There were then no rival manufactures in Europe. Europeans had not learned to imitate the art of weaving muslins; and in the purchase of Indian fabrics there was consequently much less

necessity than there now is for strictness in the examination of them." * * * "The prices now paid for the fabrics in general, though in some few instances nominally lower, are in every instance, the *jamdanees* excepted, actually higher than what the weavers are known to have received towards the close of the Mogul government, and the rates of the low assortments have been raised considerably. The great reduction of price in the *jamdanees* is owing, not to any disproportionate profit being now enjoyed by the *jamdanees* weavers in comparison with what is obtained by weavers manufacturing plain cloths, but to the inordinate profit formerly received by a very limited number of manufacturers of *jamdanees* having been reduced to a more reasonable standard, by a gradually great increase of *jamdanees* weavers, among whom a proportionably increasing competition for providing these cloths has arisen."

The middling or ordinary assortments of muslins under fifty rupees per piece of 40 by 2 cubits, such as are here mentioned by the Resident as having formed the principal portion of the goods exported from the Dacca *aurungs* to England during the latter half of the last century are now frequently made of British yarn. The Resident gives a comparative statement of the prices of about one-half of the assortments of these goods in the years 1764 and 1800. A portion of this document is here subjoined, with an additional column showing the prices, as stated by one of the principal cloth merchants of Dacca, in 1845, of these fabrics when made with English yarn. It is headed,—“Comparative statement of prices paid by the Company, for Dacca cloths, in Mr. Cartier’s chiefship, during the four

last years of the Mogul government (from 1760 to 1764), and now (1800)”—

ASSORTMENTS.	Number of Threads in the Warp.	Dimensions. Letter A.	Made of Native Thread.		Made of Eng- lish Thread.
			Price Paid from 1760 to 1764.	Price in 1800.	Price in 1845.
		Cubits.	Arcot rupees	Sicca rupees	Co.'s rupees
Dooreas	1500	40 by 2	12 0 0	15 0 0	11 0 0
Ditto, Middling.....	1900	40 by 2	18 0 0	20 15 0	14 0 0
Ditto, ditto, Broad ..	2000	40 by 2½	20 4 0	22 10 0	16 0 0
Ditto, Fine.....	2100	40 by 2	25 0 0	29 0 0	20 0 0
Charkanu, Superfine ..	2100	40 by 2	30 0 0	28 0 0	18 0 0
Ditto, ditto, Broad ..	2100	40 by 2½	33 12 0	37 11 0	28 0 0
Ditto, Batta Cogzie, Fine Superfine ..	1400	40 by 2	50 0 0	44 0 0	30 0 0
Abruwans	1400	40 by 2	36 0 0	39 2 0	27 0 0
Jamdanees	1400	20 by 2	50 0 0	36 4 0	24 0 0
Surbutees, Ordinary ..	1200	40 by 2	5 0 0	7 8 0	6 0 0
Mulmulls	1200	40 by 2	7 8 0	10 4 0	7 0 0
Ditto, Fine	1300	40 by 2	9 0 0	12 7 0	8 0 0
Ditto, ditto, Long.....	1400	48 by 2	11 0 0	14 15 0	10 0 0
Ditto, Superfine, ditto	1600	40 by 2	30 0 0	33 8 0	22 0 0
Ditto, Superfine	1600	40 by 2	20 0 0	22 0 0	15 0 0
Ditto, ditto, Long.....	1800	45 by 2	47 0 0	50 4 0	35 0 0
Alaballies	1500	40 by 2	10 0 0	13 8 0	9 0 0
Ditto, Fine	1700	40 by 2	15 0 0	17 11 0	13 0 0
Ditto, Superfine	1800	40 by 2	25 0 0	29 13 0	20 0 0
Tanjebs, Fine	1800	40 by 2	8 0 0	11 15 0	9 0 0
Ditto, Superfine	1800	40 by 2	14 0 0	18 0 0	14 0 0
Ditto, Broad	1600	40 by 2½	8 0 0	12 15 0	10 0 0
Ditto, Jungle, Fine Superfine	2200	40 by 2	36 1 0	36 5 0	24 0 0
Tanjebs, Jungle, Fine	2500	40 by 2	14 0 0	15 10 0	11 0 0
Ditto, ditto, Super- fine	2200	40 by 2	19 8 0	22 2 0	16 0 0
Nyansooks, Jungle, Fine	2200	40 by 2	33 8 0	33 0 0	22 0 0
Ditto, ditto	2500	40 by 2	33 0 0	33 0 0	24 0 0
Ditto, Jungle, Super- fine	2700	40 by 2½	50 0 0	50 0 0	35 0 0
Turundams, Superfine	2700	40 by 2	20 0 0	22 0 0	18 0 0
Ditto, Fine Superfine ..	2700	40 by 2	35 0 0	33 0 0	25 0 0

The cloths of ordinary or medium quality, of which the second class of Dacca manufactures consists, are now principally made of British yarn of a quality ranging from No. 80 down to No. 30. From the comparative cheapness of this article, and the facility there is of procuring any quantity of it of an uniform quality or size, as indicated by the numbers by which it is distinguished, it has in a great measure superseded the use of native-spun yarn in the manufacture of cloths of this kind. The first great importation of British yarn into Bengal was made in 1821; and since 1828 it has been used in the district of Dacca, almost to the entire exclusion of native thread of a quality ranging between the numbers above mentioned. The fabrics comprehended in this class are, viz. :—

Bafta (derived from a Persian word signifying “woven”) is a cloth of a stout, strong texture, which is made principally at the manufacturing stations of the Tipperah district, and at Kalakopa, in Dacca Jellalpoore. Dimensions, 12 yards by 1. It is commonly worn as a wrapper by the natives. The name of *bafta* appears to have been formerly applied to muslin in Western India. Tavernier mentions two pieces of it, each twenty-eight cubits long, which were sold at Baroach for 500 *mamoudees*, equal to £9 10s.

Boonnee (from the Hindee word *boonna* “to weave”) is a cloth made either with a red or black border. The former is worn by Hindoo, and the latter by Mahomedan women. Dimensions, 10 yards by 1.

Ekpatta (signifying a single piece or breadth) is a cloth from two to three yards in length and one and a-half in breadth, and worn by Hindoos round the

upper part of the body. The dress called *doputta* consists of two such pieces or breadths stitched together and worn in a similar manner.

Jore (derived from the word *jora* "a pair") is a cloth of which two pieces form a dress. It is chiefly worn by Brahmins. One piece is wrapped round the loins and the other round the upper part of the body.

Saree, a cloth woven with a red or black border. Like the *boonnee*, the former is worn by Hindoo, and the latter by Mahomedan females. Its middle part is wrapped round the waist, one end hanging down to the feet, and serving as a petticoat or gown, and the other end being passed over the head.

Dhotee (derived from the word *dhona* "to wash") is so named from its being washed daily at the time of bathing. It is an article of male dress worn by Hindoos. It is put round the loins, one end of it being passed in front between the legs and tucked up behind.

Hummum (apparently so named from its having been originally used at the bath) is a cloth of a thick stout texture, and generally worn as a wrapper in the cold season. Dimensions, 20 yards by $1\frac{1}{2}$.

Gamcha, a cloth originally employed as a towel, its name being derived, according to the interpretation of it by the weavers, from two Bengalee words which imply that use. It is made in pieces of five to six yards in length, and three-quarters to one and a-half in breadth. It is used for making different articles of native apparel, as skull-caps, children's dresses, &c.

The cloths of a quality inferior to the English yarn, No. 30, constituting the third class of the Dacca

manufactures, are all made of native thread spun either from Seronge or Bhoga cotton, but principally from the latter. The quantity of Bhoga cotton brought down yearly by the people inhabiting the Garrow and Tipperah hills is estimated at 150,000 maunds or 12,000,000 of pounds weight; but only a small portion of this is imported into Dacca—most of it being woven into cloths in the looms of the neighbouring districts of Mymunsing, Tipperah, Sylhet, and Bulloah. Some of the finer assortments of cloths of this class are distinguished by the names of those of the preceding one, as *boonnee*, *bafta*, &c. The two varieties which specially belong to it are called *garrha* and *guzee*, and are the coarsest fabrics made in Bengal. They constitute the principal clothing of the poorer classes of people, and are also used for packing other cloths, and to cover corpses, for which purpose a large quantity is consumed annually both by Hindoos and Mahomedans. The manufacture of these cloths is a branch of industry which has not been affected by the competition of very coarse British fabrics—the thread of which they are made being sold at a less price than that of the lowest number of English yarn imported into the province. A piece of good *guzee* cloth of ten yards in length may be purchased for twelve annas (1s. 6d.),* which is about the 134th part of the price paid for a piece of *mulmul khas* (or the finest muslin made in India) of the same dimensions.

The mixed fabrics of cotton and silk forming the fourth class of the textile manufactures of Dacca are

* A very inferior kind costs only 8 annas, or 1s. per piece.

produced to a considerable extent in the town, and at Dumroy and Abdoolapore. The cotton yarn used in their manufacture is of a quality ranging from No. 30 to 80. The silk is called *muga* or *moonga*, and is imported into the district from Sylhet and Assam. It is prepared for the loom by being first steeped in water mixed with powdered tumeric, and afterwards in lime juice. It is next rinsed, dried, and sized with paste made of parched rice and water, without an admixture of lime, and then reeled and warped in the same manner as cotton thread. The cloths of this class are of considerable variety both as regards texture and pattern. Some consist chiefly of cotton, with only a silk border, or a silk flower or figure, in each corner; others are striped, chequered, or figured with silk throughout the body of the cloth. The different assortments may amount to thirty in number, but the principal varieties are the *Kutawroomee*, *Nowbuttee*, *Azeezoola*, and *Luchuck*. Some of these cloths are embroidered in the cotton portion of the warp with the needle, and are then called *Kashida*. They vary in size from one and a quarter to six yards in length, and from one to one and a quarter yards in breadth. Their price ranges from 2 to 20 rupees (4s. to 40s.) per piece.*

* The manufacture of mixed cotton and silk goods is carried on to a considerable extent at Malda. These cloths, which are called *maldiki*, from the place of their manufacture, have the warp made of silk and the woof of cotton. They are generally made of a thin texture, and consist of two kinds, called *elachi* and *mushru*—the former having both sides alike, and the latter having one side different from the other.

These cloths are made exclusively for the markets of Arabia. Some, indeed, are occasionally shipped to Rangoon, Penang, and places to the eastward, but the far greater portion of them is exported to Jidda, whence they are sent into the interior of the country. A considerable quantity of them is sold at the annual fair held at Meena, in the vicinity of Mecca. They are made into turbans, gowns, vests, &c., by the Arabs. They were formerly transported from Jidda to Egypt, and were at one time the principal articles of export from Dacca to Bassora, whence they were sent to various parts of Mesopotamia and to Constantinople.*

The mixed cotton and silk manufacture of Bengal appears to be one of ancient date. Dr. Buchanan supposes that the two principal varieties of these cloths manufactured at Malda, were introduced into this province by the Mahomedan conquerors from the north-west of India,† but there is reason to believe that the art of making these fabrics was practised in Bengal long before the followers of the Prophet invaded the country. They have been manufactured by the Hindoos from time immemorial; and doubtless they were included among the cloths called by the Romans

* The goods formerly sent from Bassora to the Turkish capital, mostly consisted of Bengal and Guzerat cloths; but, according to Sir H. J. Brydges, this branch of traffic has, for several years past, been superseded by the importation of British manufactures into the latter city.—(See "Evidence on Steam Navigation to India before a Committee of the House of Commons." 1834.)

† Martin's "Eastern India—Topography of Dinagepore." Vol. II., page 97.

vestes subsericæ and *tramosericæ*.* The coarse silk of Assam and Eastern Bengal which enters into the composition of these fabrics was, in all probability, the substance to which the name of *sericum* was originally given by the ancients.† It is so abundant in Assam, that, according to Dr. Buchanan, it forms the principal material of which the clothing of the inhabitants of that country is made. He states,—“The native women, from the queens downwards, weave the four kinds of silk produced in the country, with which three-fourths of the people are clothed. The raw material is seldom purchased; each family spins and weaves the silk which it rears, and petty dealers go round and purchase for ready money whatever can be spared for exportation, or for the use of the few persons who have none of their own. Considerable quantities of the two coarser kinds are also

* The term *kalawroomee*, which is the name of a variety of these cloths manufactured at Dacca, would seem to be a compound of the Hindee word *kutaw*, rendered a “kind of flowering on cloths,” and of the Arabic one *Roomee*, signifying Grecian or Roman—the name thus indicating that these fabrics were originally manufactured for exportation to those countries which belonged to the Roman Empire. The term *Roomee*, which is in common use in India in the present day, to denote an inhabitant of Turkey or Greece, was employed in the East before the Mahomedan era. Cosmas Indicopleustes mentions that his friend Sopatrus, when he visited Ceylon in A.D. 500, was addressed by the king of that island by the appellation of *Roomee*, as indicative of the nation to which he belonged, and the same name, as Dr. Vincent observes, is still used to designate a native of those countries that belonged to the Roman Empire.—(See Vincent’s “Periplus of the Erythrean Sea.”)

† See Appendix. Note B.

exported. There may be one loom for every two women, and in great families there are eight or ten which are worked by slave girls."* The principal variety of this silk is called *muga*. It is the produce of a species of worm (*saturnia*), which, though reared upon trees planted for the purpose near the houses of the ryots, is yet also found in abundance in the jungles. Tavernier describes it as a kind of silk that is found under the trees, which is spun by a creature like our silkworms, but rounder, and which lies all the year long under the trees. This species of silk, from the circumstance of its being found upon trees in the jungles, appears to have been regarded by the ancients as a vegetable product; and hence they variously describe it as a fleece, down, or wool that was combed from the leaves, bark, or flowers of the trees of the forest. The only mode of explaining the apparent inconsistencies in the accounts given of silk by Greek and Latin writers, is to consider their descriptions of this article as applying to two varieties of it which they regarded as substances of a different nature. That the ancients were acquainted with the silk-worm is evident from the description given of it by Aristotle. He mentions it as a horned worm, which passes through several transformations in the course of six months, and produces the substance called *bombycinum*.† This, in all probability, was the produce of the mulberry silkworm. It was brought from Assyria, which Pliny regarded as the country of its production, but it is likely

* Martin's "Eastern India—Topography of Assam." Vol. III., page 679.

† Plin. Lib. XI., cap. xxii.

that it was introduced into that region from China. On the other hand, the substance designated as *sericum* was imported into Greece from India, and was apparently the coarse indigenous silk of Assam and Eastern India. Pliny states that the woolly substance which the Seres combed from the leaves of the trees in their forests was of a different nature from *bombycinum*—the produce of the worm called *bombyx* in Assyria. He also mentions the difference between the trees which produced silk in the country of the Seres, and the cotton or wool-bearing trees in the island of Tylos, in the Persian Gulf. He states that the former yield wool upon their leaves, while the latter produce it in a fruit of the shape of a gourd, and size of a quince, and which, when ripe, bursts and displays within it balls of fine down, of which cloths are made.* It is said that in former times the exportation of raw silk was not unfrequently prohibited by the kings of Assam, and that only the article in its manufactured or woven state was permitted to be sent out of the country. It was then the custom at Dacca, according to the statements of some of the weavers, to take the cloths to pieces, and with the thread thus obtained to manufacture the mixed fabrics. A policy similar to that of the rulers of Assam probably existed in China in ancient times; and it may serve to explain the fact mentioned by Pliny, namely, that the women of Cos were in the habit of undoing the silk cloths imported into that island, and of re-weaving the threads into other fabrics. These fabrics, or the Coan

* Plin. Lib. XII., cap. x. and xi.

robes, as they were designated, appear to have possessed a texture as thin and transparent as that of muslin, and, like the *jhuna*, they are said to have been chiefly worn by women of light character. The coarse indigenous silk of India, whether the *tassar* of Bengal, or *muga* of Assam, is a comparatively cheap article; and doubtless, therefore, it was the silk which Ammianus Marcellinus mentions as so common and low-priced in his time (4th century), that the poorer classes of people could afford to purchase it. It was called *metaxa** in the sixth century. Cosmas Indicopleustes mentions it under this name as an import into Ceylon from countries farther to the east, and states that it was re-exported from that island to the Arabian and Persian Gulfs.

* Like many of the names derived from Indian words which are used by the author of the "Periplus of the Erythrean Sea," to designate the cotton and other manufactures of India, the term *metaxa*, employed by Cosmas Indicopleustes, is probably derived from *mukta*, a species of silk cloth, manufactured in Bengal, or it may be a corrupt compound of *muga* and *tassar*, the names of the wild silk of Assam and Bengal—the term *muga tassar* being frequently applied at Dacca to the silk of Assam.

CHAPTER VI.

SPINNERS. — WEAVERS. — CLOTH MERCHANTS. —
WEAVING ESTABLISHMENTS OF THE MOGUL
GOVERNMENT.—FACTORY OF THE EAST INDIA
COMPANY.

SPINNING was formerly the general leisure occupation—in many cases the principal employment—of Hindoo and Mahomedan females in the district, but particularly of the former, who have always been distinguished for their unrivalled skill in this art. The cotton was either raised on the land cultivated by the family of the spinner, or purchased at the weekly markets in the neighbourhood. The poorer ryots were not unfrequently obliged to dispose of their cotton on the field—receiving advances of money from the merchants for the crop, and contracting to deliver it when gathered at a certain rate below the market price of the day. But the cultivators in less needy circumstances were in the habit of storing up the produce of their labour until a favourable opportunity of selling it occurred, or, as was more generally the case, they had the greater portion of it spun into thread in their families; and thus, by the joint employment of agricultural and domestic labour, they frequently

enhanced the price of an article, which as raw produce yielded but little profit, to more than a hundred times its original value. All the yarn formerly used in the Dacca looms was made by the spinners (*katanees*) of the district and the extent therefore to which this branch of industry was once carried on, may be inferred from the large quantity and value of the goods formerly exported from Dacca. The thread which was thus spun was sold either at the weekly markets and annual fairs, or to agents (*paikars*), who visited the villages for the express purpose of purchasing it on account of the weavers and cloth merchants. The same practice is followed in the present day, but, since the introduction of English yarn into the district in 1828, the quantity of native spun thread thus disposed of annually has been comparatively small. It chiefly consists of the finer and coarser kinds,—the intermediate sorts being now in a great measure superseded by the former article. The finest yarn is made at Dumroy, Sunargong, and Junglebaree, and is sold, as has already been mentioned, at eight rupees (16s.)* per tola weight (180 grains). In the time of the Mogul government (in the 17th century) the highest price given for thread was five Arcot rupees (12s. 6d.), and in the year 1800, 3½ sicca rupees (8s. 9d.) per tola weight. The present increased rate is apparently owing to the want of competition in this branch of industry. The spinners of this kind of yarn are now comparatively few. The

* It may here be mentioned that in these pages the rupee of the present day is valued at two shillings, and that of former times, or of dates prior to the year 1810, at two shillings and sixpence.

number, however, of those who make thread of inferior though yet fine shades of quality is still considerable, although by no means equal to what it was in the time of the Mogul government. Of this description of yarn there are seven varieties, which are sold at rates varying, to the extent of a rupee, from seven to one rupee, and four sorts under the value of one rupee, the prices of which range from eight to one anna per tola weight. The coarse yarn of a quality below No. 30 is made by women of the poorer classes in all parts of the district. A person belonging to this class of spinners generally buys at the weekly market a seer (2 lbs.) of undressed cotton for one and a half annas ($2\frac{1}{2}d.$); and with the common spinning wheel of the country manufactures it into thread, which she sells at the market of the following week for four annas ($6d$)

A ryot quitting his plough to work at the loom, or leaving the latter in order to resume the former, is a common occurrence, especially among those who make coarse cloths, in many parts of India, but at Dacca this is seldom the case, weaving being there a distinct trade, to which those practising it devote their whole time and attention. The weavers belong to the caste of Tantee, one of the nine pure castes of Sudras (Nobosakh) formed, or rather re-modelled by Rajah Bollalsen, in the 11th century of our era. They appear to be the descendants of the tribe of Tunterba, who were the offspring of a man of the Sudra and a woman of the Kshetriya castes. They are subdivided in the town of Dacca into two classes called Jhampaniya and Tantee, who hold no social intercourse with each

other, and who are apparently of a different origin. Though weaving, according to the institution of castes, is the sole and legitimate business of the Tantees, yet it is practised by various tribes of the Sudras, who have abandoned their own callings and now confine themselves to it. In ancient times it was the duty of the magistrate to prevent the encroachments of inferior on the occupations of superior castes, but such invasions of Hindoo conventional rights have long since ceased to be regarded as falling under the cognizance of the civil authority. Distinctions of this nature are no longer observed, and hence we find persons belonging to various classes of Sudras, as those of the castes of goldsmiths, barbers, betel-leaf sellers, and dealers in salt and oil, all engaged in the business of weaving. In like manner, any Hindoo of a superior caste who is unable to earn a subsistence by his hereditary calling, may now, without forfeiting the good opinion of the order to which he belongs, perform the work of a person of an inferior or subordinate caste. The conduct of an individual in this respect comes under the consideration of the *dul* (society) of which he is a member; and, generally speaking, so long as the person does not transgress the rules of his own caste, either by intermarrying with, or eating in the company of one of a lower caste, he is not interdicted from following the occupation of the latter. Accordingly, *kayasthas*, or writers, who are considered as holding a rank next to that of the *vaidyas*, or physicians, and who stand at the head of the Sudras, are, like many of the inferior castes, also employed in the business of weaving. Mahomedans, too, are engaged in the

same occupation, and have long been the principal weavers of flowered fabrics in Sunargong. The encroachment of these different classes on the trade of the real weaver caste or Asil Tantees, as the latter designate themselves, probably arose from the demand for cloths in former times to supply the foreign markets having become greater than the limited number of the original weavers in the district could supply. Since the decay of the Dacca trade many families of weavers of these mixed classes have left the district and engaged in other pursuits in different parts of the country. Their number, however, is still considerable in the villages and manufacturing stations, and is regarded as exceeding in the aggregate that of the real weavers, who are mostly located in the town. Weavers of a class called Joogeas, who are totally distinct from all the others, manufacture the coarse cloths of thread made of Bhoga cotton of a quality inferior to No. 30. They are settled in almost every village in Bengal, but are most numerous in its eastern districts, especially in Tipperah and Bulloah. They weave with a shuttle made of buffalo horn, and use a starch or paste made of boiled, instead of parched rice, as a size for the warp; and on this account they are looked upon by the other weavers as an impure and degraded caste. The women as well as the men of this class work at the loom, and it is probable that in remote times, before the institution of castes, this was the practice in Bengal, as it appears to have been in ancient Egypt and Greece, and still is in Assam, where, according to Dr. Buchanan, the women of all ranks are employed in weaving. The Dacca weavers

belong to a community which has long been distinguished for its attachment and obedience to its political rulers. The only instance of popular discontent that has been publicly manifested by them since the accession of the East India Company to the Government occurred in 1810, when a tax was imposed on houses in the town. On that occasion the inhabitants showed a disposition to turbulence, but with this exception they have always been a very quiet and peaceable people. The weavers, generally speaking, are quick and intelligent, but are remarked as being more under the influence of their *gosseans* or priests than most other Hindoos in Bengal. Though naturally inactive, and incapable from want of physical strength of enduring much laborious exertion, they are yet patient and persevering, and exceedingly industrious in their occupation. Their usual hours of work are from 6 or 7 o'clock in the morning till noon, and from 2 or 3 till 6 or 7 o'clock, P.M. The number of Hindoo holidays, fasts, or days of religious observances on which labour is suspended, amounts to about forty in the year. The principal festival of the weavers residing in the town (most of whom are Vaishnavas, one of the three great sects into which the Hindoos are divided) is the *Jooma Ashtámi*, or anniversary of Krishnu's birth. On this occasion there is a public pantomimic representation of some of the scenes in Krishnu's life. Portable stages, gaily decorated, and bearing the actors upon them, are paraded on men's shoulders through the streets, accompanied by bands of music and trains of horses and elephants; they are illuminated at night, and the exhibition is then terminated by

a fine display of fire-works. The expense of this annual procession, which is considered the great spectacle of the place, is borne by the weavers in the town, and defrayed by voluntary contributions among them. The sum expended on this show in 1845 amounted to £200, but in former times, when the weavers were in better circumstances than they are at present, it was not unusual to lavish as much as £600 on it.

The number of looms belonging to a weaver varies considerably, there being in some houses only one, while in others there are as many as five or six. A head or master weaver, possessing two or three looms, either employs a journeyman (*kareegur*) or an apprentice (*nikaree*), or has not unfrequently both to assist him. The rate of wages is regulated according to the ability of the journeyman, and the kind of work which he is employed to perform, viz., whether winding or reeling thread, warping or weaving, and in the latter case according to the particular fabric which he is engaged to make. The weavers thus employed are generally divided into three classes, and are engaged either by the day or month, but generally by the latter:—

- 1st. Workmen who prepare the thread for the loom: they are paid at the rate of one anna and a half (2*d.*) per day, but for work done at night they have an extra allowance;
- 2nd. Weavers of plain muslins, who have two to three annas (3*d.* to 4½*d.*) per day;
- 3rd. Weavers of flowered muslins, who frequently receive wages at the rate of four annas (6*d.*) per day, or are paid according to the number of spots or figures they make—generally one anna for seven figures.

An apprentice commences to

learn the art of weaving at the age of ten or twelve years, and is generally bound, by written agreement, to his master for a term of four or five years. He is fed and clothed by the latter, and is usually allowed from two to ten annas (3*d.* to 15*d.*) per month, according to his expertness in the business, during the last year or two of his servitude. Boys of fourteen years of age may be seen working at the loom, and are often very expert at the business. In the year 1760 the wages of a journeyman weaver varied from eight to twelve annas (1*s.* 3*d.* to 2*s.*), and in 1800 from one to two rupees (2*s.* 6*d.* to 5*s.*) per month. Provisions, however, were then cheaper than they are now, as may be seen from the following comparative statement of the prices of three of the principal articles of diet, as used by the natives, at the periods referred to :—

ARTICLES.	1760.	1800.	1837.
Rice, per maund } (80 lbs.) }	8 to 12 annas (1 <i>s.</i> 3 <i>d.</i> to 1 <i>s.</i> 10 <i>d.</i>)	1 to 1½ A. rupees (2 <i>s.</i> 6 <i>d.</i> to 3 <i>s.</i> 9 <i>d.</i>)	1 <i>r.</i> 8 <i>a.</i> to 2 Sicca rupees (3 <i>s.</i> to 4 <i>s.</i>)
Salt, per maund } (80 lbs.) }	1 Arcot rupee. (2 <i>s.</i> 6 <i>d.</i>)	4 Arcot rupees. (10 <i>s.</i>)	5 Sicca rupees (10 <i>s.</i>)
Mustard Oil, per } maund (80 lbs.) }	2½ ditto (6 <i>s.</i> 3 <i>d.</i>)	4 ditto (10 <i>s.</i>)	7 ditto (14 <i>s.</i>)

The rent of land was also considerably lower then than it is at present.

The implements used in weaving are made by different classes of workmen, as they are in this country. The shuttles are manufactured by persons belonging to the caste of *kamar*, or blacksmiths, in Bickrampore, who follow the business as a distinct trade. These

instruments are hawked about the town and *aurungs*, and sold at the rate of four annas (6*d.*) each. The reed-makers are persons of a low caste, called Buddeas. They are a gipsy-like tribe, who live in boats throughout the year, and wander about on the rivers of the eastern districts of Bengal. They follow different occupations, but their principal one is that of reed-making, hence they are generally known by the appellation of *sannas*, which is derived from that of a reed. The reels and other implements are made by the ryots and persons who work in bamboo, and are sold at the weekly and annual fairs held in the district. The entire cost of an Indian loom, comprising all the apparatus used in the preliminary operations of weaving, does not exceed five rupees (10*s.*)*

The total number of looms employed in the manufacture of cloths of a quality superior to No. 30 in the district and *aurungs* connected with it, in the year 1846, was estimated by the most intelligent weavers and cloth merchants of Dacca at 4,410, viz., 1,500 in the town of Dacca, 700 at Sunargong, 900 at Dumroy, 250 at Junglebaree and Bazetpore, 360 at Teetbadhee, and 700 at Moorapara, Abdoolapore, and other villages in the district.

The value of the manufacturing industry of the different *aurungs* formerly connected with the Company's factory, or "the extent of their ability to produce cloths," in 1800, was estimated by the Commercial Resident in that year, as follows:—

* See Appendix. Note C.

		Arcoot rupees.	£.
Dacca	-	450,000	56,250
Junglebaree and Bazetpore	-	450,000	56,250
Sunargong	-	350,000	43,750
Dumroy	-	250,000	31,250
Teetbadhee	-	150,000	18,750
Narainpore	-	200,000	25,000
Chandpore	-	50,000	6,250
Serampore	-	50,000	6,250
Low assortments	-	450,000	56,250
Possible deficiencies in the			
Estimate	-	200,000	25,000
<hr/>			
Total	-	A.R. 25,000,000	£325,000

The cloth-merchants of Dacca formerly comprised persons of various nations, as Hindoos, Moguls, Pathans, Turanis, Armenians, Greeks, Portuguese, English, French, and Dutch. They now almost entirely consist of Hindoos, and are divided into two classes, called *Mahajuns* and *Kupreeas*—the former being wholesale, and the latter retail dealers. The Mahajuns purchase ready-made goods, or advance money for the manufacture of cloths at Dacca, and the other *aurungs*. They buy and sell cloths either by the measure of the *hāth* (cubit) or *guz* (yard), of which latter there are two sorts, ranging from $1\frac{3}{4}$ to $2\frac{1}{4}$ *haths* ($19\frac{1}{2}$ inches) in length. The former of these yards, which I believe was the standard measure at the Company's factory, they use in selling cloths, and the latter in buying them from the weavers. They frequently employ a commercial language of their own in making their bargains, or sometimes effect them by

"the arithmetic of the touch," that is, by touching the joints of their fingers under a cloth. In advancing money for the manufacture of cloths, they employ agents called *paikars*, who, like the chapmen in the manufacturing districts of England in former times, travel through the country to purchase yarn, or to give out money to the spinners, in order to prepare it. Under them again are *mokeems*, who inspect the cloths in the looms during the progress of their manufacture. A superintendence of this sort is necessary to prevent the weavers from substituting coarse for fine thread in making cloths. Among the frauds practised by the latter it used to be, and I believe still is, a common one, to make the body of a piece of muslin of inferior thread, and particular folds of it, such as are only submitted to the inspection of intending purchasers, of thread of a superior quality—the two kinds being so neatly joined as to render it almost impossible for an inexperienced judge of muslin to detect the imposition. The Mahajuns carry their goods to the upper provinces of India, or to the great annual fairs in Bengal. Others repair yearly to Calcutta with stocks of cotton and silk cloths, and sell them to the masters or super-cargoes (*nakhoodas*) of the Arab vessels from Jidda and Bassora. They are the principal importers of English yarn from Calcutta into Dacca, and have shops in the town for its sale. Prior to 1783, raw cotton, such as was used in the manufacture of cloths of a medium quality, was chiefly imported from Surat, and after that date from Mirzapore, but since English yarn has come into use, the importation has greatly declined. The retail dealers sell

their goods in shops in different parts of the town, but chiefly in a particular bazaar, which, from white cotton cloths being the principal articles of merchandise in it, is generally known by the name of the "*sufed bazar*," or white bazaar. They buy and sell through *dāllāls* (brokers), who, like the inferior class of agents, or *paikars*, are paid by a small commission on the amount of their transactions. The *dāllāls* though now reduced to a petty and unimportant body, were formerly a wealthy and influential class of agents, and were the parties through whom the European commercial factories at Dacca were supplied with goods.

In the time of the Mogul government, establishments were maintained at Dacca, Sunargong, Junglebaree, and Bazetpore, for the manufacture of the *mulboos khas* muslins for the royal wardrobe at Delhi. These factories, or "*mulboos khas kootees*" as they were designated, were superintended by Darogahs, who exercised uncontrolled authority over all persons employed in them. The most expert weavers in the province were selected to work here; their names were registered; and they were compelled to attend daily at the appointed hours, until the different tasks assigned to them were finished. Inspectors carefully examined the thread that was brought to the looms, and none was permitted to be used until it was compared with the standard musters, and approved of. "The incessant inspection of the Darogahs and their people," says the Resident, "and the fear of incurring punishment for any deviation of the duty expected of them, must have effectually deterred the weavers, while manufacturing the cloths, from attempting any improper practices.

Under these circumstances, the *mulmul khas* manufactured for the Emperor was, probably, not only made of superior thread, but consisted, throughout the warp and woof, as nearly as possible of thread of one quality." Guards (*peons*) were placed over any weavers who showed an unwillingness to work, and corporal punishment was inflicted on them if they attempted to abscond. Besides being thus oppressed, they were defrauded of a considerable portion of the wages allowed them by the government. "It is stated that, in the time of Sooraj-oo-Dowlah, 25 per cent. was regularly deducted from their pay, and retained as a perquisite by the officers and servants of the *mulboos khas kooties*. Speaking of the condition of the Dacca weavers at this time, the Abbé Raynal remarks, "It was a misfortune to them to appear too dexterous, because they were then forced to work only for the government which paid them ill, and kept them in a sort of captivity."* The manufacture of *jamdane*, or flowered muslins, was a monopoly in the hands of government; and subsequently the finest of these fabrics were reserved for the use of the Nawaub at Moorshedabad. According to the Resident, these fabrics were made exclusively by the weavers of the Dacca *aurung*. "They were advanced for by the Darogah of the Sudder *mulboos khas kootie* at Dacca, but, probably from some local considerations, a part only of these cloths was made under the immediate inspection of the Darogahs. The rest were manufactured at the weavers' houses." The weavers, it is stated by Raynal, were forbidden, under pecuniary

* Raynal's "History of the Settlements and Trade of the Europeans in the East and West Indies." Vol. II., p. 157.

and corporal penalties, to sell to any person whatever a piece exceeding the value of seventy-two livres (three guineas), and European and native merchants were obliged to purchase these muslins through brokers, specially appointed by the government. These agents paid a considerable sum annually for the privilege they enjoyed; and, in return, they charged a per centage on all sales made by them. A tax, called "Chappa Jamdanee," was also levied on the weavers of this sort of muslin, and continued to be collected till the year 1792, when it was abolished by the Company.

The *mulboos khas* investment formed a part of the *nuzzur* (offering) which the Governor of Bengal presented annually to the Emperor of Delhi. Its cost, however, was actually defrayed from the revenues of the province—the sum paid for it being regularly charged in the accounts of the Jaghire, designated *circar ali*, which was a portion of territorial revenue assigned to the Soubahadar of Bengal, Behar, and Orissa, for the maintenance of his household establishment, and of the *foujderan* or criminal courts; also to defray various contingent charges incurred in the discharge of duties connected with his office. The *mulboos khas* which Jaffier Khan (afterwards better known by the name of Moorshud Kooli Khan) sent yearly from Dacca to the Emperor Aurengzebe, consisted of about 500 pieces of muslin, and a few other articles, such as gold and silver thread, shields, fans, and attar, the total cost of which was 127,871 12 Arcot rupees, or £15,984. The following account of it was drawn up by the Commercial Resident, from documents submitted to him by the Nawaub Nussurut Jung of Dacca, in the year 1800:—

DACCA AURUNG.

100 Pieces of jamdanees, at 250 Arcot rupees per piece.....	25,000	0
50 Ditto of cloths flowered in silk chicon, at 200 Arcot rupees per piece.....	10,000	0
60 Rezas, or small pieces, flowered in silver, at 100 Arcot rupees per piece.....	6,000	0
Bleaching and dressing	1,480	0
	<hr/>	42,480 0

SUNARGONG AURUNG.

100 Pieces of plain muslins, at 200 Arcot rupees per piece.....	20,000	0
20 Ditto of surbunds, at 80 Arcot rupees per piece.....	1,600	0
Bleaching and dressing	2,950	4
	<hr/>	24,550 4

BAZETPORE AURUNG.

100 Pieces of plain muslin, at 200 Arcot rupees per piece.....	20,000	0
Bleaching and dressing	1,050	12
	<hr/>	21,050 12

JUNGLEBAREE AURUNG.

100 Pieces of plain muslins, at 100 Arcot rupees per piece.....	10,000	0
Bleaching and dressing	1,000	0
	<hr/>	11,000 0
Attar of Naugissore (<i>mesua ferrea</i> ..		260 0
50 Sylhet shields, at 16 Arcot rupees each.....	800	0
Ornamenting them	2,680	0
	<hr/>	3,480 0
100 Sticks covered with gold thread		4,850 12
200 Fans, made of the leaves of the palmyra tree	200	0
Ornamenting them	4,000	0
	<hr/>	4,200 0
Gold thread (badla)		5,000 0
Silver thread		11,000 0
	<hr/>	

Total.....A.R. 127,871 12

The Dacca factory of the East India Company is mentioned by Tavernier in the year 1666. He describes the

building as "tolerably handsome," and states that a Mr. Prat was the president of the establishment. It appears to have been a one-storied house, having a large central hall, with sleeping apartments and offices around it.* A new factory, on an extensive scale, was erected between the years 1724 and 1730, after the Emperor Furrokshere had exempted the English from the payment of duties in carrying on their trade. It was built in the form of a square, and inclosed a considerable extent of ground, surrounded by low ranges of warehouses, and having in the centre a house for the factors, besides offices and accommodation for servants and guards. There are no records extant at Dacca which give any account of the factory establishment prior to the middle of the last century. It consisted, at that time, of two or more factors, as the Company's European covenanted servants were called, the principal agent or factor being distinguished by the title of "chief." The native portion of the establishment comprised, in addition to a considerable body of domestic and warehouse servants, a large number of workmen, who were engaged in marking, assorting, and

* Messrs. Eyre and Bradyll, the agents of the factory, were confined here in 1688 by the Nawaub Behadur Khan. They state, in the account which they give of their imprisonment to Job Charnock and council:—"Having secured our persons in so much that we are not suffered to stir out of the room we lie in, which is the *delaun*, the biggest in the house. We are not permitted to lie in our chambers for fear we should make our escape by undermining, somebody having told the Nawaub that the English that were imprisoned in the time of Shaista Khan escaped in that way."—(See Alexander's "East India Magazine." Vol. XII.)

embaling the cloths for transmission to Calcutta ; also a company of sepoys, employed to guard the factory and escort goods from the *aurungs* to Dacca, and thence to the Presidency. The chief and his assistants had small salaries, but, to compensate for this, they possessed the privilege of trading on their private account, being allowed by the Company to embark in such speculations or dealings as did not interfere with their own sales and purchases. A common table was maintained at the factory, at the expense of the Company. The expenditure incurred on account of the permanent establishment, in the year 1761, amounted to 57,666 11 rupees (£7,206), of which sum a little more than one half is charged under the heads of "diet, batta, and allowances" for European covenanted servants, and the other half under those of "wages, military expenses, durbar charges, boat hire, ground rent, and repairs of houses at the factory."* The goods were procured thorough *dallāls* (brokers), who entered into contracts to supply them within a stipulated time. They received from the factory agents money to the amount of one half or even three-fourths of the estimated value of the cloths, to enable them to make the necessary advances to the weavers, and, in return, gave security for the payment of heavy pecuniary penalties in the event of their failing to fulfil their contracts. By this mode of advancing money to the merchants and manufacturers "the Company were invested with a prior right in the goods for which they contracted, and hence their purchases in India acquired the name of an *investment*."† The cloths

* See Appendix. Note D.

† Grant's "History of the East India Company," page 67.

when finished and delivered at the factory, were assorted and prized by a *jachendar*, appointed by mutual agreement. The prizing of cloths consisted in comparing them with the original musters or samples on which the contract was based, and which were deposited at the factory; and then in arranging them, according to their qualities of texture, under four classes which were represented by certain letters of the alphabet, and to each of which a fixed or standard value was attached. Whatever cloths were too coarse to be admitted into the fourth class were rejected, or thrown on the hands of the brokers. When the valuation of the stock was completed, the amount of commission to the brokers was calculated, and affixed to the foot of each prizing list. This varied according to whether the cloths were advanced for, or were purchased ready-made at the fairs or markets in the district. On the former about 8 per cent., and on the latter $4\frac{1}{2}$ per cent. were allowed, besides various contingent expenses, as *aurung* charges; *batta* in changing money; wages to *mokeems*, or inspectors of cloths in the looms; *rafugars*, or darners; *mohurers*, or accountants; also, for holiday offerings and charity to *fakcers*, amounting in the aggregate to an additional charge of $7\frac{1}{4}$ per cent.

In 1774 a provincial council, consisting of a chief and four members, was appointed to superintend the revenue and commercial affairs of the province. The different departments into which the public business was divided were conducted by ten European servants of the Company, one of whom, styled the sub-export-warehouse-keeper, had charge of the goods procured for exportation to Calcutta. The revenues of the

eastern districts, instead of being remitted to the Presidency as they are at the present day, were absorbed in providing the investments of the Dacca, Luckipore, and Chittagong factories. The system of employing *dāllāls* was discontinued, and in their stead *gomastas* (agents) were settled at the different *aurungs* to provide the investment. Warehouses called *khattahs* were erected at the different *aurungs*, and here the *gomastas* collected their goods, and had them assorted and prized prior to despatch to the head factory at Dacca. In 1775, *naibs* were appointed to the different manufacturing stations to decide cases in which weavers were concerned, and with the exception of disputes relating to the public revenue, they were empowered to decide suits to the amount of 100 rupees, and in all below 10 rupees their decision was final. Jusseraut Khan who, as Naib Nazim, exercised at Dacca the office of a magistrate, framed a set of regulations which gave to the *gomastas* almost entire control over the weavers at the *aurungs*. The agents of the Company advanced at this time large sums of money to the weavers—more than the latter could repay in goods; and they thus in a great measure monopolised the manufacturing industry of the district. Burke, in his charges against the Company's servants in Bengal, states:—"In 1773, the trade at Dacca was carried on by native brokers, and there were no balances due by the weavers, but in 1776 the balances amounted to an immense sum. Money was at this time advanced for more than they could possibly execute in the year. In this way they were kept in

bondage to the Company, to the exclusion of private merchants and foreign factories.”*

In 1787, a Commercial Resident was appointed to conduct the affairs of the factory. The abuses arising from the unchecked authority of the native agents at the *aurungs* were now rectified; and the dealings with the weavers were carried on conformably to the regulations of Government. “At this factory,” says the Resident in 1800, “it is an annual instruction to the *aurung gomastas* that the regulation which respects the weavers and the commercial residents be read to the weavers before any engagements for the new year are entered into. Every individual weaver executes a separate written engagement for the provision of the cloths which he voluntarily contracts to deliver, and these engagements are in no instance departed from, except by a written request on the part of the weavers or their representatives. The weavers’ accounts are annually adjusted, and each weaver has throughout the year a copy of his running account (called a *haut chitty*) regularly brought up constantly in his possession.” This system of management appears to have been continued down to 1817, when the factory was closed.

* “Burke’s Works.” Vol. XI., page 138.

CHAPTER VII.

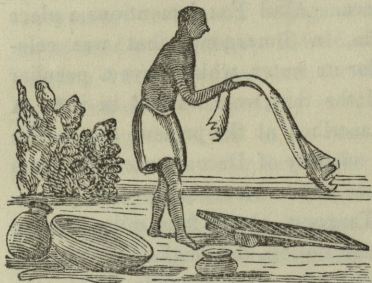
BLEACHING—DRESSING—PACKING.

THE process of bleaching is carried on in the suburbs of the town of Dacca. Abul Fazul mentions a place called Catarashoonda, in Sunargong, that was celebrated in his time for its water, which gave a peculiar whiteness to the cloths that were washed in it.* A similar property is ascribed at the present day to the water found in the vicinity of Dacca, extending from Naraindeah, the place where bleaching is now principally practised, to Tezgong, about four miles distant from it. At the latter station, the English, Dutch, and French had extensive bleaching grounds during the time they had factories here, but on the extinction of the foreign trade of the place Tezgong was soon deserted, and is now to a great extent overrun with jungle.

The water used in washing cloths at Naraindeah, is taken from wells on the bleaching-ground. In the rainy season, when the rivers are high or full, it per-

* Tavernier mentions the water at Baroche as having this property. He says, this place "has always been very famous by reason of the river, which has a particular quality to whiten their cottons."

colates through the intervening fine strata of sand, and rises in the wells to within four or five feet from the surface of the ground, but in the dry season, when the former are low, it sinks to a depth of about eighteen feet, and is frequently thick and muddy and unfit for washing. Cloths are first steeped in large semicircular earthen vessels (*gumlas*), answering the purpose of tubs in this country, and are then beaten in their wet state upon a board, the surface of which is generally cut into transverse parallel furrows. This mode of washing has been practised in India

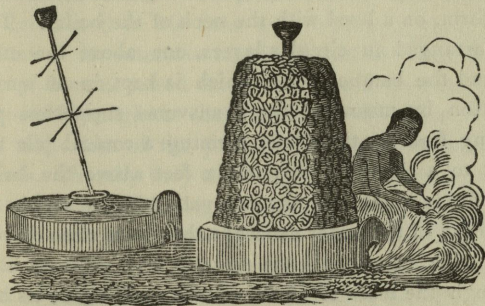


from remote antiquity, as appears from an institute of Menu, where it is stated: — “Let a washerman wash the cloths of his employer, little and little,

or piece by piece, and not hastily upon a smooth board of salmali wood.” (Inst. 398.) Fine muslins, however, are not subjected to this rough process, but are merely steeped in water. All sorts of cloths, of whatever texture they may be, are next immersed for some hours in an alkaline ley, composed of soap* and *sajee*

* Soap appears to have been introduced into India by the Mahomedans, who are still the principal, if not the sole manufacturers of it in Bengal. The Hindoos formerly used, as they still do, a lixivium formed from the ashes of different plants, particularly the plantain tree, in washing clothes. The

matee (impure carbonate of soda). They are then spread over the grass and occasionally sprinkled with water, and when half dried are removed to the boiling-house in order to be steamed. The boiler used for



this purpose is an earthen vessel, having a very wide mouth, and of a size capable of containing about eight or ten gallons of water. It is placed over a small excavation in the ground, and built up with clay, so as to form a broad flat surface around its neck,

Indian name of soap—*saboon*—is an Arabic word, and appears to be the origin of *sabun*, which, according to Dr. Clarke, is the name given to soap in the Crimea; and of *savun*, which the same writer also states is applied to it at Genoa.—(See Dr. Clarke's "Travels in Russia and on the Don.") The soap manufactured at Dacca is considered the best in Bengal, and was formerly an article of export to different parts of India, Bassora, Jidda, &c. It is composed of the following materials, viz. :—Shell lime, 10 maunds; sajee matee, 16 maunds; common salt, 15 maunds; sesamum oil, 12 maunds; goat's suet, 15 seers.

having at one part a slanting opening or passage leading to the excavation below. A hollow bamboo, or reed, fitted with a cup or funnel made of cocoa nut shell, serves as a tube through which the water is poured into the vessel. The cloths are twisted into the form of loose bundles, and placed upon the broad clay platform, on a level with the neck of the boiler. They are arranged in circular layers, one above the other, around the bamboo tube, which is kept in an upright position by means of the transverse supporters projecting from it, the whole forming a conical pile that rises to a height of five or six feet above the boiler. The fire is kindled in the excavation below, and as the ebullition of the water proceeds the steam rises through the wide mouth of the vessel, and diffuses itself through the mass of cloths above, swelling by its high temperature the threads of the latter, and allowing the alkali still adhering to them to penetrate more completely into their fibres, and seize on the colouring matter of the cotton.* The operation of steaming is commenced in the evening, and continued all night till the following morning. The cloths are then removed from the boiler, steeped in alkaline ley, and spread over the grass as on the preceding day, and again steamed at night. These alternate processes of *bucking*, and *crofting*, as they are technically called, during the day, and of steaming at night, are repeated

* The process of bleaching linen by steam is said to be practised with great success in France. It was brought from the Levant, and was first made known to the public by Chaptal. —(See Webster and Parkes's "Encyclopædia of Domestic Economy.")

for ten or twelve days until the cloths are perfectly bleached. After the last steaming, they are steeped in clear filtered water, acidulated with lime juice in the proportion generally of one large lime to each piece of cloth. Lime juice has long been used in bleaching in all parts of India. Tavernier states, that Baroach was celebrated in his time as a bleaching station on account of its extensive meadows, and the large quantities of lemons raised there; and he further remarks, that:—"Throughout the territory of the Great Mogul they make use of the juice of citrons to whiten their calicuts, whereby they make them sometimes so white that they dazzle the sight." Mixed fabrics of cotton and *muga* silk are steeped in water mixed with lime-juice and coarse sugar, which latter article is said to have the effect of brightening the natural colour of the silk. The best season for bleaching is from July to November. At this time the water is clear and pure, and gales, or gusts of wind carrying dust seldom occur to interfere with the drying of the cloths on the grass. Fine thin fabrics exposed to a strong sun at this season of the year are dried in three quarters of an hour; cloths of a medium texture, in an hour and a half; and stout fabrics, in three hours.

The bleachers are all Hindoos of the caste of *dhobee* (washermen). The more wealthy individuals of the class are generally either the proprietors or the renters of the bleach-grounds, and employ a considerable number of washermen, chiefly from Junglebaree, during the bleaching season. The boilers are erected under thatched sheds on the bleaching-field, and there are commonly five or six of them under one roof. Spread-

ing the cloths over the grass or upon bamboo rails was formerly done by a set of workmen called *contadars*, whose business it also was to keep the bleach-ground clean, and free of weeds, prickly grass, and whatever tended to injure the cloths. Since the abolition, however, of the Company's factory this has ceased to be a separate business, and is now performed by the other workmen employed on the field. The cost of bleaching depends upon the number of times the cloths are steamed. Including the expense of dressing them, it varies from 30 to 160 rupees (£3 to £16) per 100 pieces.

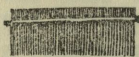
The cloths having been bleached are *dressed* by workmen, who practise the several arts included under that head as distinct trades.

Nurdeeahs arrange the threads of cloths that happen to be displaced during bleaching. They work in the manner shown in the figure. The cloth wound upon a roller (*nurd*) is placed between two posts on the



bleaching-ground and is unrolled and carefully examined. The damaged portion of it is then stretched out, and

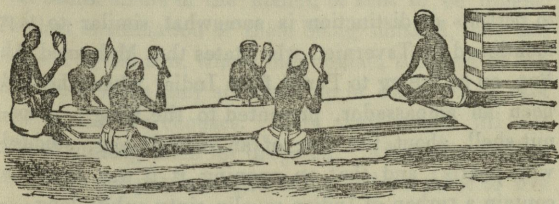
being wetted with water, an instrument like a comb, formed of the spines of the nagphunee plant (*Cactus indicus*) is drawn lightly along the surface of the displaced threads in order to bring them into their proper places.



Rafu-gars are darners, who repair cloths that have been damaged during bleaching. They join broken threads, remove knots from threads, &c.

Dagh-dhobees are washermen, who remove spots and stains from muslins. They use the juice of the am-roola plant (*Oxalis corniculata*), which is described as yielding an acid like that of sorrel, to take out iron marks; and a composition of ghee, lime, and mineral alkali to efface stains and discolorations such as are produced by decayed leaves and the plants called neelbundee and cuchu.

Koondegurs are workmen who beetle cloths. Muslins are beaten with smooth chank shells (*Voluta gravis*; Lin); and cloths of a stout texture with a mallet upon



a block of tamarind wood, rice water being sprinkled over them during the operation.

Istreewallahs iron cloths. The very fine plain and flowered assortments of fabrics are ironed between

sheets of paper. This work is done only by Mahomedans, and appears to have been introduced into India by them.

The cloths are folded by the *nurdeeahs*, and then piled up and formed into bales which are compressed by workmen called *bustabunds*. This is done by placing them between flat boards tied together by strong ropes and tightly twisting the latter with pieces of stick. The ancient mode of packing fine muslins was to inclose them in the hollow joints of bamboo, one of which, forming a tube about 18 inches in length and 1 inch in diameter, was sufficiently large to contain a piece of muslin 22 English yards long and 1 broad. The cylindrical cases of this kind in which the *mulboos khas* muslins were sent to Delhi were lacquered and gilded; and when brought into Dacca from the Government weaving establishments at the *aurungs*, were paraded in great state (as was the case with all articles intended as offerings to the Emperor) through the streets of the town to the residence of the Nawaub prior to their despatch to Court. This mode of presenting muslins to persons of distinction is somewhat similar to that mentioned by Tavernier, who states that Mahomed Ali Beg, on returning to Persia from India, where he had been an ambassador, presented to the King a cocoa-nut shell, about the size of an ostrich egg, studded with pearls; and that on opening it it was found to contain a turban of Indian muslin sixty cubits long.

The Commercial Resident gives, in a letter to the Board of Trade, the following account of the mode practised at the factory in the last century, of dressing cloths, and of packing them for transmission to

England :—" After the cloths are bleached, they are delivered in a wet state to *nurdeeahs* and *contadars*, who comb and dry the cloths. The *chicon* and *kusheeda* fabrics, and all thick assortments, as well as cloths rendered tender from repairs, are dried on the ground, and all the rest on bamboo rails, to which they are secured by strings. The cloths, after having been dried, are examined by a *serberacar* with respect to their colour and state of dryness, and are then wound by the *nurdeeahs* upon their rollers. They are covered with baftas, and carried in the evening to the factory, where they undergo another examination next morning. Fine and thin cloths are first given to *nurdeeahs* to be *turpayed*, and then to *rafu-gars*, if they are to be gold-headed or flowered. They are next unrolled, and examined on tables at the factory, and if necessary are sent to the *dagh-dhobees* to have spots and stains removed, and lastly to *rafugars* to have damages repaired. They are next folded, and then distributed among the *koondegurs* to be beetled with chank shells or the mallet, or sent to be ironed. The last examination of them being finished, they are exposed to the sun, where they remain till three in the afternoon, when they are made up in loose bales, and sent to the warehouses. Here they remain till the time of sorting them for despatch. After this sorting the cloths are put into open bales. From three to five pieces are drawn from each letter of every bale, and being compared by the Resident or his assistants, with the musters and approved of, the cloths are embaled, screwed, marked, and rendered ready for despatch. A despatch generally consists of eight or ten thousand pieces."

CHAPTER VIII.

NEEDLEWORK.

THE art of sewing in Bengal is almost entirely confined to the Mahomedan portion of the community. It is not practised among the Hindoos, except by a few persons (chiefly females) of the caste of *dhobee*,* but it is a branch of industry in which they do not display any skill. Indeed, so little acquainted are the Hindoos with the use of the needle, that Dr. Buchanan states, "he is not aware of any Hindee word for sewing, except that used for passing the shuttle in the act of weaving."† Fine needlework or embroidery appears to have had its origin in Egypt. The Israelites there learned the art, and excelled in it before they settled in the land of Canaan,‡ and the Phœnecians and Greeks derived their knowledge of it from that country, and were the means of diffusing it among the nations of the

* The tribe of *rujuk*, or washermen, of the time of Menu, are described by Halhed as "sewers of cloth."—(See Halhed's "Code of Gentoo Laws," pages 104 and 108.)

† Martin's "Eastern India." Vol. II., pages 699 and 979. There are words in Sanscrit for sewing, but it is probable they apply to rude stitching, rather than to embroidery.

‡ Exodus, xxvii., 16; xxviii., 39; xxxviii., 23.

West. It was carried to great perfection in some parts of Assyria—rich tapestries and carpets embroidered with the needle being specially mentioned among the manufactures for which both the Medes and Babylonians were famed in ancient times. It appears to have been extensively practised in Mesopotamia about the end of the ninth century. The palace of the Caliph Mochtadi, at Bagdad, is described as having been adorned with 38,000 pieces of gorgeous hangings and tapestries, 12,500 pieces of which were of silk, embroidered with gold.* It is an art, indeed, for which that country has always been celebrated, and it is probable that from the banks of the Euphrates it was first introduced into Bengal. In the ninth century the merchants of Bassora carried on a direct trade with Eastern India and China. Many Mahomedans settled at this time in the principal ports of these countries; and, doubtless, they introduced from the West such arts, and among others that of embroidery, as were required to prepare the goods suited to the markets of Arabia.† This conjecture regarding the origin of embroidery in Bengal is, in addition to the fact of this art being only practised by Mahomedans, further strengthened by the tradition at Dacca that the needles‡ formerly used there were procured from Bas-

* "Art of Needlework." By the Countess of Wilton.

† The same principle has been acted on by others in later times. The East India Company, it is said, sent out to India, about the year 1675, "skilful dyers, to prepare the silks for the British markets."—(See Grant's "History of the East India Company," page 88.)

‡ The manufacture of needles is said to have been intro-

sora, and likewise by the circumstance of Bassora and Jidda having been from time immemorial the great marts for the embroidered goods of Bengal.

The different branches of needlework in India are chiefly practised by men, and are carried on in Bengal as distinct trades.

Silai (sewing) affords employment to a large body of *durzees* (tailors) of Dacca, who are considered as being the most expert workmen of their class in Bengal. They are principally employed in workshops in the town, where they prepare a variety of Mahomedan dresses, comprising *pugrees*, or turbans; *topees*, or skull-caps; *mirzaes*, or jackets with loose sleeves and open cuffs; *koortees*, or long close garments, worn like shirts; *jamās*, or long gowns, double-breasted, and having the skirts plaited with folds; and *paee jamās*, or drawers. They also make articles of native female dress, as *cholees*, bodices or spencers; *tilluck*, a garment resembling the *jama*; and *tobund*, or petticoats.

Rafu-gari (darning) is a branch of needlework in which Mahomedans display a degree of manual dexterity almost equal to that exhibited by the Hindoos in weaving. An expert *rafugar* can extract a thread twenty yards long from a piece of the finest muslin of the same dimensions, and replace it with one of the finest quality. This operation, which is called *choonae*, or "picking out a thread," is generally done when a coarse thread is discovered in a web of muslin after

duced into England in 1540, in the reign of Queen Elizabeth, by a native of India. The art was lost at his death, but was restored by Staples Green in 1560.—(See "Art of Needlework." By the Countess of Wilton. Page 254.)

bleaching. The *rafugars* are principally employed in repairing cloths that have been injured during bleaching, in removing weavers' knots from threads, joining broken threads, forming the gold and silver headings on cloths, and sewing the private marks of manufacturers upon cloths before they are sent to be bleached. Most of them are addicted to the use of opium, and generally execute the finest work whilst they are under the influence of this drug. They constitute a distinct class of workmen or Mahomedan guild, and are governed in all matters relating to their business by two elders or chiefs, elected to the office for life, and who preside at their deliberations. They admit none but their descendants in the male line as apprentices into their fraternity. The number of their houses or families at Dacca is estimated at 150.

Zar-do-zi (embroidery) is an art for which Dacca has long been celebrated. "From Dacca," says the Abbé de Guyon, in 1744, "come the best and finest Indian embroideries in gold, silver, or silk; and those embroidered neckcloths and fine muslins which are seen in France."* Muslins, net fabrics, and woollen shawls and scarfs are embroidered with silk, gold, and silver thread, and with the wings of the beetle (*elytra*). The silk which is used is both of the common and floss varieties, and appears to have been formerly an article of exportation from this place, as the name of "Dacca silk" is still given to one description of this material used for flat embroidery in England. The gold and silver thread and wire (*badla*) are of different sorts, as,

* "Histoire des Indes Orientales." Par M. L. Abbé Guyon. Vol. II., page 30.

goolabatoon, used for embroidering muslins ; *goshoo*, for caps ; *sulmah*, for turbans, caps, slippers, and hooka snakes ; *boolun*, for gold-lace and brocade, &c. The cloth is stretched out in a horizontal bamboo frame of rude construction, raised about a couple of feet from the ground, and the figures intended to be worked or embroidered are drawn upon it by designers, who are generally Hindoo painters (*nuqash*). On woollen cloths the outlines are traced with chalk, and on muslin with pencil, and the body of the design copied from coloured drawings. The embroiderers, seated upon the floor around the frame, ply the needle, which, it may be remarked, they do not draw *towards*, but, on the contrary, push *from* them, as is the case with all native sewers in India. In place of scissors they commonly use a piece of glass or China-ware to cut the threads. Like the preceding class, the *zar-doz*, or embroiderers, constitute a distinct society or Mahomedan guild of artisans.

The embroiderers of Dacca are mentioned by Pennant, as excelling in making carpets of a kind of "hemp equal in appearance to silk."* This manufacture is not now carried on, nor is that kind of embroidery practised here which is described by Linschoten in 1599. In speaking of the Portuguese in Bengal he says, after mentioning the cotton manufactures of the country :—"They have likewise other linens excellently wrought of a herb, which they spin like yarn. This yarn is to be seen at the house of Paludanus. It is yellowish, and is called *Herba Bengalæ*, wherewith

* Pennant's "Views of Hindostan." Vol. II., page 340.

they do most cunningly stitch their coverlets, pavilions, carpets, and mantles, therein to christen their children, as women in childbed with us used to do; and make them with flowers, and branches, and personages that is wonderful to see, and so finely done with cunning workmanship that it cannot be mended throughout Europe. Likewise they make whole pieces or webs of this herb, sometimes woven and mixed with silk, though those of the herb itself are dearer and more esteemed and much fairer than silk. These webs are named *sarrijn*, and it is much used and worn in India, as well for men's breeches as doublets, and it may be washed like linen, and being washed it showeth and continueth fair, as if it were new."* It is described by Mandelslo as being produced by "a certain herb, having on the top of its stalk, which is about the size of a man's thumb, a great button, like a tassel; this tassel is spun out, and there are excellent stuffs made of it. The Portuguese call it *Herba Bengalæ*, and make of it hangings and coverlets, in which they represent all sorts of figures."† What the substance here mentioned is I have not been able to ascertain. It is no longer used in Bengal, either as a material of embroidery or for the manufacture of cloths in the loom, and is an article that is quite unknown to the embroiderers and weavers of Dacca at the present day. Speaking of Cuttack, in 1724, Captain Hamilton remarks:—"Of *herba* (a

* "Travels of Linschoten." Translated by John Wolfe. Chap. xvi.

† Mandelslo's "Travels," A.D. 1639. Translated by J. Davis. Book II., page 94.

sort of tough grass) they make gingham, panascos, and several goods for exportation.”* This appears to be the *sanseveira zeylanica*, the fibres of which are used by the natives to make bow-strings, &c. Cloths made of *herba* are included among the Indian manufactures prohibited by the act of legislature of A.D. 1700 from being imported into this country; and they appear to be the “stuffs of barks of trees;” so frequently mentioned among the cloths imported by the East India Company of France, about the end of the seventeenth, and early in the eighteenth century.

Chikan-kari or *chikan-dozee* (embroidering with cotton on muslin) includes a great variety of ornamental figured or flowered work on muslin gowns, scarfs, tippets, &c. It also comprises a variety of network, which is formed by breaking down the texture of the cloth with the needle, and converting it into open meshes. Mahomedan dresses are frequently ornamented in this manner. There are about thirty varieties of this kind of work, of which the *tartor* and *sumoonderlah* are considered the principal. A specimen of the latter is displayed at the Exhibition. The business of *chikan-kari* embroidery affords employment to a considerable number of men and women in the town.

Kashida is the name given to cloths embroidered with *muga* silk or coloured cotton thread. This embroidery, which is generally of a coarse description, is the most extensive branch of the art carried on at

* “Travels to the East Indies.” By Captain A. Hamilton. A.D. 1727. Vol. I., page 393.

Dacca, and forms the leisure occupation of the majority of the females of poor Mahomedan families in the town. The cloths having the figures stamped upon with a red dye, which is removable by washing, are distributed among the embroiderers of this class, and are worked by them when not engaged in their domestic duties. The merchants who carry on this business employ male and female agents to distribute the cloths and silk and cotton thread among the embroiderers, and through them they make occasional advances of wages to the latter, as the work proceeds. The amount earned by each embroiderer is a small pittance, not exceeding on an average ten or twelve shillings in the year. These cloths are prepared solely for the markets of Bassora and Jidda, but chiefly for the latter, to which a considerable quantity of them is exported annually.

CHAPTER IX.

DYEING.

The art of dyeing is not practised at Dacca to any extent, nor in such perfection as it is in many places in India. The only varieties of native or Indian dyed thread formerly used in the Dacca looms were red, black, and blue, all of which colours were employed in making the borders of the *saree*, *boonnee*, and other fabrics; but these are now in a great measure superseded by English yarns. The Dacca dyers, who are almost all Mahomedans, are chiefly employed in dyeing dresses and thread of various fugitive colours. The thread is purchased in the neighbouring villages, and after being dyed is twisted and knitted by women of the poorer classes of Hindoos into various articles, as waist cords worn by Mahomedans, strings for threading ornaments, &c. The people who carry on this business are called *puttoah*, the number of whose shops in the town for the sale of these articles amounted to about forty in 1845. Cloth printers (*chipigurs*) are employed to stamp the figures for embroidering on the *hasida* cloths. The stamps which they use for this purpose are small blocks of the wood of

the *khutul* tree, having the figures carved in relief. The dye is a red earth, which is brought from Bombay, and is apparently what is called "Indian earth" imported into that place from the Persian Gulf. It is mixed with gum mucilage when applied to the cloth, and is easily effaced by washing. The cloth printers are employed to apply tinsel of gold and silver leaf to the marriage dresses of the natives. They also stamp lines or passages from the *Vedas* upon cloths (*namabullee*) for the use of Hindoos, and texts or sentences from the Koran upon the winding sheets (*kuffun*) for Mahomedans.

CHAPTER X.

ANCIENT COMMERCE OF THE EASTERN PART OF BÈNGAL.—RISE AND DECLINE OF THE CLOTH TRADE OF DACCA.

THE earliest notice of the muslins of Bengal as an article of commerce occurs in the "Periplus of the Erythrean Sea," written by Arrian, a merchant and mariner of Alexandria, who lived, it is generally supposed, in the second, or early in the third century of the Christian era. In this work the Gangetic muslins, pearls,* malabathrum,† and spikenard,‡ are mentioned as articles of export from a mart which was situated on the banks of the Ganges. It is further stated that this town or mart took its name from that of the river on which it stood; and doubtless, therefore, it was the city of *Gange Regia*, described by Ptolemy as situated near the mouths (περὶ τὰ στόματα) of the Ganges,|| and as the capital of the kingdom of the Gangaridæ. Various places have been assigned by authors as the site of *Gange Regia*—as Gour, by Rennel; Rajmahal,

* See Appendix. Note E.

† Idem. Note F.

‡ Idem. Note G.

|| Idem. Note H.

by D'Anville; Hoogly, by Wilford; and a place called Duliapore, by Heeren; but it is more probable that this city was identical with the ancient capital of the Hindoo kingdom of Banga-desa or Bongoz (Bengal) which stood in Vickramapura, near Dacca. Tradition points to this locality as having been the site of a rich mart in the time of the Hindoo government. It was under the direct control of the Rajahs of Vickramapura, and is said to have been called Lakhi Bazaar, from the circumstance of no merchant being allowed to settle in it who was not possessed of merchandise or capital to the amount of one lac of rupees. Such interference, however absurd and improbable it may appear at the present day, was, nevertheless, in strict accordance with the spirit of the Hindoo laws in ancient times. "In commercial affairs," says Heeren, "the king was permitted to exercise an extraordinary degree of influence. He might absolutely forbid the exportation of merchandise, or reserve the whole monopoly to himself. He issued ordinances relative to the buying and selling of goods; he regulated the prices of the market, and received as his customary dues five per cent. on the profits of the sale." (Heeren's "Asiatic Nations." Vol. III., p. 349.) A great annual fair, called the *barnee*, is still held on the spot where this bazaar is said to have stood. It lasts about a fortnight, and is attended by merchants from all parts of Bengal, as well as from many distant provinces of India. The silk cloths, iron, and skins,* mentioned by Pliny as exports from the country of the

* See Appendix. Note I.

A.D. 636. It soon deprived Siraf of its monopoly of the Oriental trade, and from its well-chosen site near the confluence of the Tigris and Euphrates, by which it commanded the navigation of these rivers in connexion with the Persian Gulf, it became the emporium through which the commodities of India were conveyed, via Mesopotamia, to the shores of the Mediterranean. During the eighth and ninth centuries the merchants of Bassora, who were chiefly Arabs of the tribe of Azd and Jews,* extended their voyages beyond Ceylon. They sailed direct to Eastern India and China, and there purchased in the places of their production the various articles of merchandise which their predecessors had been in the habit of repairing to Ceylon in order to procure. The intercourse that was thus opened between Arabia, Eastern India, and China, led to the settlement of Mahomedans in the principal ports of the two latter countries. Speaking of the followers of the prophet in the East at this time, Dr. Robertson remarks:—"They were so numerous in the city of Canton that the emperor (as the Arabians relate) permitted them to have a cadi or judge of their own sect, who decided controversies among his countrymen by their own laws, and presided in all the functions of religion. In other places proselytes were gained to the Mahomedan faith, and the Arabian language was understood and spoken in almost every seaport of any note."† It appears to have been at this period that

* "Expedition to the Euphrates and Tigris." By Colonel Chesney. Vol. II., page 584.

† Robertson's "Ancient India," page 95.

the trade between Bengal and Bassora was first established. The kingdom of Rami, described by the Two Mahomedan Travellers of the ninth century,* is evidently Bengal. Among the productions or commodities belonging to it, are mentioned cotton garments so fine that they might be drawn through a finger-ring; lign-aloes; † sable skins, ‡ of which they made the furniture of saddles and housings; the karkadar, or unicorn (rhinoceros), inhabiting the *fens* of the country, the horn of which animal was a valuable article of merchandise; || elephants, gold and silver, and shells (*cowries*), which served for small money. §

After the conquest of Bengal, by the Mahomedans from the north-west of India, in A.D. 1204, the intercourse with Arabia was greatly increased. Islamism was now rapidly disseminated over the eastern part of the province by the *pīrs* (saints), ¶ who came from the West and settled in the country, and as proselytism advanced, pilgrims began to repair to Mecca, and thus a regular maritime communication was established between Bengal and Jidda. This place became the principal port of the Red Sea about the year 877. The Indian trade, which had been carried on at Berenice and Myos Hormos, and subsequently at Aduli, was now

* "Accounts of India and China." By Two Mahomedan Travellers of the ninth century. Translated by the Abbé Renadout.

† See Appendix. Note L.

‡ Probably otter-skins, considerable quantities of which were formerly prepared in the districts of Sylhet and Mymensing for exportation to Bootan, Thibet, and China.

|| See Appendix. Note L. § Idem. Note L.

¶ Idem. Note M.

transferred to Aden and Jidda. The latter was at first subordinate to Siraf and Bassora, and received its Indian goods chiefly from them, but as Mahomedanism spread over the East it became an independent port, and carried on a direct trade with India.

The vessels that sailed annually from Bengal to Jidda in the thirteenth century were laden with the merchandise of the country, consisting principally of its manufactures. Some of the devotees who proceeded to Arabia in these ships took only a few of the more costly productions of the loom and needle, as intended offerings at the Prophet's shrine :—

“ Gifts he prepares to deck the Prophet's tomb,
The glowing labours of the Indian loom.”

CAMOEN'S LUSIAD, BOOK VII.

Others combined traffic with religion, and carried with them stocks of goods, which they sold at the fair of Meena, in the vicinity of Mecca. Speaking of Bengal, in 1272, Marco Polo remarks :—“ Much cotton is grown in this country, and trade flourishes. Spikenard, galangal, ginger, sugar, and many sorts of drugs are amongst the productions of the soil, to purchase which the merchants from various parts of India resort thither.”* The external commerce of Bengal was at this time in the undisputed possession of the Mahomedans. They were the sole masters of the Ethiopian, Arabian, and Indian Seas, and had stations convenient for trade in every country along these coasts. In the fourteenth and fifteenth centuries the goods of Bengal, intended for the markets of Europe, were either

* See Marsden's translation of the “ Travels of Marco Polo.”

shipped to Ormus and Bassora, in the Persian Gulf, whence they were sent, partly by the inland navigation of the Euphrates, and partly by land carriage, to Aleppo and Constantinople; or they were despatched to Aden, Mocha, or Jidda, and thence to Suez, from which place they were transported overland to Cairo, and down the Nile to Alexandria, where they were purchased by the merchants of Venice, and distributed by them over the western countries of Europe. The merchandise of the farther East was at this time sent to the Persian Gulf from Malacca, which was then the entrepot of the Indian Archipelago. Bengal carried on a trade, chiefly in rice and cloths, with it, Java, Ceylon, and the Maldivé Islands. Chittagong was then the principal port of Bengal. It is mentioned by Ibn Batuta,* in 1324, under the name of Sadkawan, as the place where he landed on his arrival from the Maldives. He describes it as a town situated on the sea-shore and the great port of the kingdom, and as a place remarkable for the exceeding cheapness of provisions. Fakeer Adeen, the first independent Mahomedan king of Bengal, then resided at Sunargong, near Dacca, and is mentioned by this traveller "as being kind to strangers," a remark which leads us to infer that he encouraged commerce in his territory. Early in the sixteenth century (1503) Vertomannus, a traveller from Rome, mentions his arrival in Bangella (Bengal) from Tarnassari,† in Narsinga, near Masulipatam. Like Ibn

* Lee's translation of the "Travels of Ibn Batuta," page 194.

† This place, which Dr. Vincent says he could not find in modern maps, but the site of which he supposes was between Pulechat and Bengal, is laid down in a map appended to Sir

Batuta, he notices the great fertility of the country, and the abundance and cheapness of all the necessaries of life, and states in regard to its commerce that fifty ships laden with silk and cotton goods were despatched annually to Persia, Arabia, Ethopia, and Egypt. There were at this time (which was fourteen years anterior to the first visit of the Portuguese to Bengal) Christian merchants settled in the country. They were natives of a place called Sarnau, apparently a town in Pegu, and carried on a traffic with it in precious stones, civet, benzoin, musk, and lign-aloes (*calampat*), which they exchanged for amber, coral, &c. They are described as "white men," and as "writing backwards, after the manner of the Armenians." Their dress was made of "camblet, loose and full of plaits, and lined with bombasin" (cotton), and their caps were conical-shaped and of a scarlet colour. "They used no shoes, but wore loose hose of silk garnished with divers jewels," and had on their fingers "rings with stones of incomparable splendour."* These Christian merchants no doubt were Nestorians, many of whom, according to Marco Polo, were settled in Eastern India and in Karain, a province of China, in the thirteenth century.†

The Portuguese first visited Bengal in 1518. In

Thomas Herbert's "Travels (page 336), on the banks of the Kistna," at some distance inland from Masulipatam. In a map in Nieuhoff's "Travels" (A.D. 1662) it is placed on the south side of the river Nagunda, and apparently in the site of Temerycotta.

* "Voyages of Lewis Vertomannus, a Gentleman of Rome, A.D. 1503." Translated by R. Eden, 1576. Chap. xiii.

† Marsden's "Travels of Marco Polo."

this year John de Silveira arrived here with four sail from the Maldiv Islands, with the view of erecting a fort (or factory); but after a residence of several months, during which he and his crew suffered greatly from a famine in the country, he was obliged to leave it without having accomplished his object.* Similar unsuccessful attempts to found a commercial settlement were made by Raphael Perestillo in 1524, and by Martin Alfonso De Mela in 1538. The imprisonment of the latter officer by Mahomed Sha led to hostilities, in the course of which Chittagong was burned by Antonio De Silva Menesis.† From this time down to the middle of the 16th century the Portuguese, either alone or in league with the Kings of Arracan, appear to have been engaged almost in constant warfare with the Mahomedan rulers of Chittagong. Cæsar Frederick mentions that on his arrival there in 1569 he found the commander of a fleet of Portuguese merchantmen besieging the town: and "every day," he observes, "there were some slain, at which we rested with no small fear, keeping good watch and ward aboard."‡ A truce having been obtained at last, the vessels of the fleet—"eighteen in number, large and small,"—were allowed to be laded, after which they sailed to join the homeward-bound fleet at Cochin, which was then the rendezvous for the Portuguese ships from Ormus, Diu, Malacca, and Bengal.

* "Antonio Galvano's Account of the Portuguese Discoveries."

† "Harlean Collection of Voyages."

‡ "Voyages and Travels of M. Cæsar Frederick, a Venetian Merchant, to India." Published in 1588.

The route by the Red Sea to countries bordering on the Mediterranean appears to have been abandoned by travellers in favour of that round the Cape of Good Hope soon after the arrival of the Portuguese in India. Vertomannus, early in the 16th century, returned to Rome, via Lisbon. And Cæsar Frederick, in speaking of the Portuguese fleet, states, "in one of these vessels I was determined to go to Lisbon, and so to Venice;" but he appears to have been prevented from carrying out his resolution—the fleet having sailed before the vessels from Bengal reached Cochin. The Portuguese had no agents in Bengal until the end of the 16th century, when they succeeded in establishing houses of trade in different parts of the province, where they collected their goods for exportation to Europe.*

The chief marts in the eastern part of Bengal, whence cotton goods were exported about the beginning of the 17th century, were Chittagong, Bengala, Serripore, Bacola, and Sunargong.

Chittagong was the principal port of Bengal, and was hence designated "Porto Grande" by the Portuguese.† It is mentioned by Cæsar Frederick about the middle of the 16th century as "a great port from

* See Appendix. Note N.

† Satgong or Hoogly was called "Porto Pequeno," or the little port, in contradistinction to Porto Grande. Cæsar Frederick describes Satagan, in 1569, as "a reasonable fair city of the Moors, abounding in all things." Thirty to forty vessels were laded annually at it with "rice, cotton, cloths, lac, sugar, in large quantity, long pepper, oil of zerkeline, and many other articles." At the time of Frederick's visit to it large vessels did not proceed higher up the river Hoogly than a place called "Buttor," which he mentions as being distant "a

whence they carry for the Indies great store of rice, great quantity of bombast (cotton) cloth, sugar, corn, and money, with other merchandise." The exports subsequently noticed are galls (myrobalans), wax, cardamoms, long pepper, &c.

Bengala stood on an island at the mouth of the Cosmin (Megna), but the place where it was situated is unknown in the present day. Rennel mentions that no traces of it now exist. "It is described," he says, "as being near the eastern mouth of the Ganges, and I conceive the site of it has been carried away by the river."* It was at one time supposed to be Chittagong, but it is evident that they were different places, from the circumstance of both towns being occasionally mentioned together in the works of geographers and travellers in the early part of the 17th century. Cluverius describes Bengala as a city of great trade:—"Urbs Bengala magna celeberrimo imperio insignis: insignis in insula fluvii Cosmin sita est. [Urbs Bengala una ex præstantissimis Indiæ est ubi omnes reperiuntur deliciæ quas ceteræ optimæ possident Europæ civitates. Hinc exportantur merces pretiosæ, sericum, xylinum, zebettum, saccharum, oryza, cannæ de Bengalæ vulgo cannæ Hispanicæ dictæ.]"†

Serripore is mentioned by Fitch, in 1586, as a town good day's rowing from Satagan." He states that the natives erected here a bazaar or temporary market-place, composed of straw huts, which he says "remain as long as the ships are there, and till they depart from the Indies," after which they were burned to the ground.

* Vide Rennel's "Memoir of the Map of Hindostan." Second edition, page 57.

† "Introductio ad Univers: Geograph: P. Cluverii." See Appendix. Note O.

distant about six leagues from Sunargong. There were formerly two places of this name in the eastern part of Bengal, one not far from Chittagong, and another in the district of Dacca. The latter appears to be the one here referred to. It stood on the banks of the Kirtenessa, a branch of the Ganges, and was, according to the tradition of the natives, a town of great trade till the early part of the 17th century, when it was destroyed by the encroachments of the river. Fitch describes it "as a great mart for cotton goods," and mentions that he embarked here in a vessel belonging to a Portuguese, and passing by Chittagong and Sundeep, sailed for Pegu.

Bacola was situated in Chunderdeep in the district of Backergunge. It is described by Fitch as a well-built town, the streets being large and wide, and the houses "very fair and high builded." It abounded in cotton and silk goods, rice, oil, &c.*

Sunargong, already mentioned as a manufacturing town in the district of Dacca, was also a place of general trade towards the close of the 16th century. According to the same author, it exported rice to all parts of India, Ceylon, Pegu, Malacca, and Sumatra. He states that many of the people here were very rich, but that they lived in huts, and wore only a cloth round the waist: an appearance of poverty which doubtless they assumed in order to evade the cupidity of their rulers. In 1626, Sir Thomas Herbert mentions Chatigan, Serripore, Bacola, and Sunargong, as "rich and well peopled towns on the Ganges."†

* See Appendix. Note P.

† Herbert's "Travels into Africa and Great Asia." London: 1634.

Dacca, on being constituted the capital of Bengal in 1608, soon became also the principal emporium of the eastern part of the province. Tavernier mentions that most of the wealthy merchants of Rajmahal settled in it at this time. The greater part of the trade of Sunargong, Serripore, and Bacola, was transferred to it during the latter part of the 17th century. It became the great depôt of the cotton manufactures of the country, and a general mart for rice, sugar, salt, betel nut, tobacco, &c. It exported these articles to the upper provinces of India, and imported from thence wheat, pulse, raw cotton, and woollen cloths. Salt was sent to Assam, and otter skins, shell bracelets, and ornaments of coral, amber, and tortoiseshell to Bhotan and Thibet. Muga-silk, aloe-wood, and lac, were received from the former, and musk, chowrees, and *toosh* (woollen cloth) from the two latter places. The goods sold for the markets of Arracan and Pegu were betel-nut, tobacco, muslins, jewellery, &c., while the articles imported from them were gold dust, raw cotton, catechu, orpiment, sappan wood, &c. To Ceylon, the Maldiv Islands, and the Coromandel coast, rice was the principal article of export. From the two former, tortoiseshell, coral, cowries, and chank shells, were imported; but the balance of trade to the Indian Peninsula, being then in favour of Bengal, silver specie was received from it in exchange, and in this way it is supposed the Arcot currency was introduced into the province of Dacca. Mixed cotton and silk goods, both woven and embroidered, inferior muslins mentioned under the names of *Mulmuls China Sonargan*, *Seerbunds Sonargan*, and *Dacca terindams*,

baftas, sugar, preserved fruits, cheese, indigo, and soap constituted the principal exports to Bassora and Jidda.

The East India Company, as has already been mentioned, had a factory at Dacca in the beginning of 1666, which is four years earlier than the date usually assigned as that of the introduction of muslins into England. It was subordinate to the factory at Hoogly, which was then the principal one in Bengal.*

By a *perwannah* issued by the Nawaub Shaista Khan in 1672, the English in Bengal were confirmed in the commercial privileges previously granted in their favour by the Sultan Sooja, viz., that of carrying on a free trade on the annual payment of 3,000 rupees to Government. In this edict the Mogul officers throughout the province are enjoined to aid the agents of the English "in getting in their due debts from any weavers and merchants that may really appear to be indebted to them, without giving any protection to any such person so indebted, whereby they may in any ways be wronged." In this year, however, in consequence of a misunderstanding between the Nawaub and the agents of the Dutch factory, obstacles were thrown in the way of the general trade with Europeans, and the exportation of goods by the English was therefore limited. Various arbitrary taxes were subsequently imposed on the factory agents by the Nawaub Fedai Khan; but in 1678, on their presentation of a nuzzur of 21,000 rupees to the Sultan Mahomed Azim, then Governor of

* The other factories under this establishment were Bala-sore, Cossimbazar, Malda, and Patna.

Bengal, they were relieved from all imposts, and permitted to carry on a free trade as formerly. The obtainment of the imperial firman and the increase of the investments, induced the Court of Directors, in 1681-2, to make Bengal independent of Madras in their commercial transactions. It is stated that the total value of Indian calicoes imported into England in 1678 was £160,000. A great increase, however, in the trade, appears to have taken place during the three following years, for we find that the amount of stock transmitted by the Court of Directors for investment in Bengal in 1681 was £230,000. Of this amount, however, the sum only of £16,000 was sent to Dacca. The goods exported included, besides calicoes and muslins, taffaties, and floretta yarn. In 1686, during the second period of the Nawaub Shaista Khan's administration in Bengal, the agents of the Dacca factory, in consequence of a dispute that had occurred between the Company's sepoys and the Mogul troops at Hoogly, were prohibited from carrying on their trade. And in November, 1688, on the occasion of Captain Heath's attack on Balasore, Messrs. Eyre and Braddyll, the Company's agents, at Dacca, were confined in the factory by the Nawaub Behadur Khan. In reporting their imprisonment to Job Charnock they state:—"The Nabob's Cutwall, and about three hundred gunmen lie in and about our house, who seem mightily civil to us, and hath given us the liberty of four or five servants, and to eat and drink, but not to stir out on any account."* They were

* "Voyage from Bengal to Madras, from Nov., 1688, to March, 1689."—(See Alexander's "East India Magazine." Vol. XII. 1836.)

subsequently treated with greater rigour, and kept in irons until July, 1689, when they were liberated by the Nawaub Ibrahim Khan. The Company intended to seize Chittagong and Dacca, their object being to retain permanent possession of the former, and hold the latter for a time while they dictated terms to the Mogul Emperor. Their complaints against the Nawaub were the breach of firmans, the extortions of the Government officers, and the seizure of their property—the loss of the latter at the Dacca factory being “on account of Picars, 40,000 rupees.” The only recognized place of trade belonging to the Company about this time was the factory of Chuttanutee, built by Job Charnock, in 1691, afterwards fortified, and designated Fort William, in 1699. Between the years 1696 and 1699 all the out factories of Bengal, as those in the other parts of the province were called, were closed. Goods of every kind brought from the interior were there purchased clandestinely, through native agents employed for the purpose. This interruption to trade, however, does not appear to have prevented either the Company or private merchants from procuring the finer kinds of Dacca muslins for exportation to Europe, for we find mention made at this time of thirty shillings being paid in England for a yard of muslin, which is described as being “after all only the shadow of a commodity,” a remark which, though no doubt intended as a disparagement, was, on the contrary, an acknowledgment of the fineness of these fabrics.

In 1700, in order to encourage British manufactures, an act of Legislature was passed prohibiting the importation into England of all wrought silks, Bengals,

and stuffs mixed with silk or herba, of Persia, China, or the East Indies. Among the goods thus prohibited, we find enumerated the following Bengal muslins, viz., *mulmuls*, *abrowaks* (*abrawans*), *junays* (*jhunas*), *rehing* (*rang*), *terindam* (*turundams*), *tanjebs* (*tunzebs*), *jamdamnees* (*jamdanees*), *dooreas*, and *cossaes* (*khasa*). In this year, Sir Edward Lyttleton, on behalf of the new or English Company, obtained leave to build factories at Dacca and Balasore, on the condition that the Company paid 3,000 rupees to the Nawaub of Bengal for every ship they despatched. It does not, however, appear that he availed himself of the permission thus granted as regards Dacca at least, as we find no mention of any establishment here in the subsequent notices of the English Company's concerns. In 1701, a duty of 15 per cent. was imposed on muslins, which, though it greatly reduced the profits of the Company, did not prevent them from importing these fabrics.* In 1702, the two companies were united, and, by the deed of union, the Dacca factory belonging to the old or London Company was transferred, with their other property, to the joint company, now styled "the United Company of Merchants of England, trading to the East Indies." From 1703 to 1709, the fine muslins of Bengal, particularly *mulmuls* and *dooreas*, appear to have been in great request in England. The two companies, though united, appear to have been still separately engaged in winding up their former concerns; and we find them sending out instructions for the disposal of their property, the surplus of which they order to be remitted to Bengal, and in-

* See Grant's "History of the East India Company."

vested in muslins of the kinds above mentioned. In 1717, the Emperor Furrokshere granted a firman, conceding extensive privileges in trade to the English, and it appears to have been in consequence of the protection thus afforded, that a new factory was built at Dacca in 1725. From this time down to 1756 the business of the Company at the Dacca factory was carried on without interruption. On the capture of Calcutta by Soorajoo-Dowlah in 1756, the Dacca factory was taken possession of by the Nawaub's troops. Mr. Becher, the chief, seven Europeans, four ladies, and twenty-seven sepoys were detained as prisoners, but were afterwards allowed, through the mediation of the French agent, to proceed to Fultah, where the English from Calcutta had assembled. In terms of the treaty executed by the Nawaub in February 1757, the factory was restored, and compensation granted for the loss of property sustained by the Company and their servants.

The Dutch appear to have had the principal share of the foreign trade at Dacca in 1666. Speaking of their factory at the beginning of that year, Tavernier observes:—"The Hollanders, finding that their goods were not safe in the ordinary houses of Dacca, have built a very fair house."* He mentions that they had a number of vessels of their own to transport their goods from the interior, and that they were frequently obliged to employ others, "whereby many people get a good livelihood." Thevenot states, a few years afterwards, that the Dutch and English factories were substantial buildings;† and, speaking of the vessels that

* "Tavernier's Travels." Part II., book i., page 55.

† "Thevenot's Travels." Part III., page 67.

sailed from Dacca to different parts of the Bay of Bengal, he observes that the Dutch "make good use of them for commerce." * According to Bernier, they exported large quantities of goods to Japan, as well as to Europe. Like the English, they appear to have often suffered from the oppression of the Nawaubs. In 1672 they were interdicted from trading, as has already been mentioned, and for a considerable time their business was secretly carried on by native agents. Their factory appears to have been closed for a considerable time prior to 1742, between which year and 1753 it is stated by the Nawaub Nusserut Jung to have been re-opened. In 1781 it was seized by the English, and the chief made a prisoner.

The French settled in Bengal in 1688,† but did not commence to trade at Dacca until 1726. At first they purchased their goods through native brokers, but, in the time of Nowazish Mahomed Khan (between the years 1740 and 1742), two European agents came to Dacca, and obtained permission to build a factory. They possessed, in addition to this establishment, a *gunge* or market-place in the town, and some houses at Tezgong; also a subordinate factory or lodge at Jugdea, in the Tipperah district, where an European agent and a few sepoy were stationed. On the capitulation of Pondicherry in 1778, the factory at Dacca was taken possession of by the English, but was restored by the treaty

* "Bernier's Travels"—Chapter on Bengal.

† Chandernagore was ceded by Aurengzebe to the French in this year.

of peace of January, 1783. After a lapse of ten years, it was again seized by the English, but was delivered back at the peace of Amiens. In 1803, it was re-possessed for a third time, and was held until 1815, when it was finally made over to its original owners. The whole property, consisting of the factory or lodge, a house at Tezgong, and a piece of ground in the town, containing twenty-six huts upon it, was sold by the French Government to people in Dacca in 1830. The goods exported by the French Company appear to have chiefly consisted of plain and striped muslins. In the bills of lading of five vessels that arrived in France from Bengal in 1742, we find, among a great variety of cotton goods, the following enumerated, viz., 14,340 pieces of *casses* (*khasus*), 12,680 of *mallemolles* (*mulmuls*), 7,199 of *tanjebes* (*tunzebs*), 6,080 of *terindans* and *terindins* (*turundam*), 5,280 of *doreas* (*doorees*), 243 of *nensognes* (*nyansooks*), 1,252 pieces of different embroideries of Dacca, and 10 of *Jamdanis*. From 1746 to 1755, inclusive, the French exported cloths to the amount of $28\frac{1}{2}$ lacs of rupees (£356,250); and to that of $9\frac{1}{2}$ lacs (£112,500) between 1765 and 1771.

The aggregate value of the cloth trade of Dacca, in the year 1753, was estimated by the Commercial Resident in 1800 as follows:—

FOR THE EMPEROR OF DELHI.

	Arcot rupees.	£.
Plain and flowered muslins, and cloths wrought in silver.....	100,000	12,500

FOR THE NAWAUB OF MOORSHEDABAD.

Fabrics of various kinds for the use of the Nawaub and his Court.....	300,000	37,500
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FOR JUGGUTH SETH* AT MOORSHEDABAD.

Fine and coarse cloths for the home	Arcot rupees.	£
trade	150,000	18,750
FOR TOORANEES.†		
Cloths of various kinds, for the		
markets of the Upper Provinces ..	100,000	12,500
FOR PATHANS.		
Ditto, for the markets of the Upper		
Provinces	150,000	18,750
FOR ARMENIANS.		
Ditto, for the Bassora, Mocha, and		
and Jidda markets	500,000	62,500
FOR MOGULS.		
Ditto, partly, for home consumption,		
and partly for the Bassora, Mocha,		
and Jidda markets	400,000	50,000
FOR HINDOOS.		
Ditto, for home consumption	200,000	25,000
FOR THE ENGLISH COMPANY.		
Ditto, for exportation to Europe....	350,000	43,750
FOR ENGLISH TRADERS.		
Ditto, for foreign markets	200,000	25,000
FOR THE FRENCH COMPANY.		
Ditto, for exportation to Europe	250,000	31,250
FOR FRENCH TRADERS.		
Ditto, for foreign markets	50,000	6,250
FOR THE DUTCH COMPANY.		
Ditto, for exportation to Europe ..	100,000	12,500
Total estimated prime cost..	A.R. 2,850,000 or	£356,250

* "The head of a Gentoo family of the weaver tribe or caste," who was at this time the most eminent banker in Hindostan. He had agents for the purpose of drawing and remitting money in all the principal trading towns of the empire. This introduced him into the political intrigues of the Durbar at Moorshedabad, where he and his family lived with the retinue and magnificence of princes.

† Merchants from Turan—"the country beyond the Oxus, from Persia."

Prior to 1765, the goods provided at the factory were purchased with bullion imported into the province from England. But after the Company acquired possession of the territorial revenues of the country, money was advanced from the provincial treasuries for the purposes of trade. The stock of goods thus provided annually, or "the investment" as it was called, was increased after that date to more than twice its former amount; and private merchants now began to trade with capital borrowed in the country. In 1771 the Company exported cloths to the amount of ten lacs of rupees (£125,000), and English private traders to that of twenty lacs (£250,000). The manufacture of muslins had been attempted at Paisley as early as the year 1700, but it was not until 1781 that it was permanently established and carried on with success in Great Britain. On the expiration of Arkwright's patent, and the introduction of mule twist in 1785, this branch of industry was greatly extended. From 1781 to 1787, the cotton manufacture of Great Britain increased in value from £2,000,000 to £7,500,000. In the latter year there were forty-one spinning factories at work in Lancashire. In 1787, the estimated prime cost of the cloths that passed through the custom house of Dacca was fifty lacs (£625,000), while the value of the whole trade of the town for the same year was calculated at one and a quarter crores of rupees (£1,562,500). This appears to have been the most flourishing period of the cloth trade of Dacca, or it was, at least, the year in which the amount of exports was the greatest. Soon after this, the trade began to decline. In 1793, the total value of cloths exported to foreign countries was estimated at 1,362,154 Arcot

rupees, or £170,269, of which amount £77,640 belonged to the East India Company, £58,535 to English traders, and £34,094 to Hindoo and other merchants. The estimated prime cost of the cloths manufactured at the stations connected with the Dacca factory, for exportation, from 1790 to 1799, inclusive, was 13,626,018 11 6 Sicca rupees (£1,703,252), of which amount £1,035,460 belonged to private traders, and £667,792 to the Company. In 1807 the amount of the Company's exports was £107,690, while in 1813 it was reduced to the comparatively small sum of £33,811 8s. In 1817, the Commercial Residency was abolished, and the factory closed.

Since the extinction of the trade to Europe the manufacturing industry of the district has, from the increasing importation of cotton-twist and cloths into the country, been declining yearly. Native-spun thread, with the exception of very fine and very coarse qualities, has in a great measure been superseded by British yarn. The cotton goods manufactured at Dacca in 1844 were classified as follows, viz. :—

	Rupees.	£.
1st. Fine muslins made of native-spun yarn of a quality above No. 250, manufactured for the courts of Delhi, Lucknou, Lahore, and Nepaul, and for wealthy natives. Estimated annual value,	50,000	5,000
2nd. Muslins of an inferior sort, and cloths of medium quality, made of English yarn ranging from No. 30 to No. 100, used in the district, and exported to various parts of India. Estimated annual value	500,000	50,000

	Rupees.	£.
3rd. Cloths of inferior quality made of native-spun thread below No. 30, worn by the poorer classes, &c. Estimated annual value	150,000	15,000
4th. Cloths of mixed texture of cotton and silk, the former being principally English yarn, woven and embroidered, and manufactured exclusively for the Jidda market. Estimated average annual value for some years prior to 1845	200,000	20,000
5th. Embroidered goods of various sorts, as muslins, net fabrics, woollen cloths, scarfs, shawls wrought with silk, gold, and silver thread, &c. Estimated annual value	45,000	4,500
6th. Cloths flowered with cotton thread, or ornamented with open net-work. Estimated annual value.....	10,000	1,000

Deducting £40,000, which is the computed value of the British cotton yarn imported into Dacca and the neighbouring marts, and £5,000 as the value of the silk used in the fabrication of cloths of mixed texture, the amount of money expended annually among the manufacturers of the district does not exceed £54,000. The effect of this decline in the manufacturing industry of Dacca is most apparent in the town. The population of the latter, which was estimated in the year 1800 at 200,000, was found by a census taken in 1838 not to exceed 68,000, while the annual amount of the collections of the police assessment on houses above a certain rent had fallen, between the years 1814 and 1838, from 31,000 rupees (£3,100) to 10,000 rupees

(£1,000). To counterbalance, however, this decayed condition of the city, there has been a considerable increase in the agricultural products of the district, while the rates of wages among the labouring classes generally are higher than they formerly were. This may be said to have commenced about the end of the last century. Various measures which were then introduced, such as the repeal of the duties on the exportation of grain, the abolition of the Arcot currency,* which had long pressed as a heavy burthen on the labouring classes, and the permanent settlement on the part of Government with Zemindars, have all contributed to extend cultivation, and to raise the price of agricultural labour considerably above what it was in former times. Besides the greater quantity of grain produced now than formerly, two articles, viz., safflower and indigo, which at one time were only cultivated to a small extent, have within the last fifty years become staple commodities of the district. In 1787, the whole quantity of safflower grown here was consumed by the dyers in the town. In 1800, the quantity exported was 2,000 maunds (148 cwt.), and now the average annual quantity raised is estimated at 5,000 maunds (3,571 cwts.) In 1801 there were only two small indigo factories in the district, while in 1833 the number had increased to thirty-three, producing on an average 2,500 maunds ($1,785\frac{1}{2}$ cwt.) of indigo yearly, and creating an annual outlay of money among cultivators and persons engaged in the manufacture of this dye to the amount of £30,000. The cultivation of sugar-cane, oil seeds, and plants for cordage (as *sun*

* See Appendix. Note Q.

and *pat*) has also of late years been considerably increased in this and the neighbouring districts. Another source of benefit to the agricultural population will, it is hoped, be found in the cultivation of cotton. The experiment of growing cotton in the district suited to supply the wants of the English market has been carried on by Government during the last seven years. It is under the personal superintendence of a gentleman practically acquainted with the culture of this plant in America. Though, indeed, little success has attended the cultivation of the American or other exotic varieties of cotton in the district, yet there is reason to hope that the result of the efforts now being made to raise the native kinds of the plant adapted to the above-mentioned purpose, will prove more fortunate. The celebrity of the indigenous cotton used in the manufactures of the district, and the suitability therefore of the soil to this cultivation lead us to anticipate success in this experiment. Government have done everything in their power to promote the object in view. In addition to an expenditure of upwards of £3,000 on the experimental farm, they have held out encouragement to the ryots to engage in this branch of cultivation, by making advances of money to them for the purpose, and promising to purchase all the cotton that they raise.—(Royle's "Culture and Commerce of Cotton in India," &c.) In the town, extensive steam-mills, originally erected for husking rice, are now employed for the manufacture of sugar; and some minor branches of trade have also sprung up, as the exportation of hides, horns, and jute. A good deal also has been done to improve the state

of the town and ameliorate the condition of the poorer classes of the inhabitants. With the aid of funds and convict labour, placed by Government at the disposal of a municipal committee, composed of Europeans and natives, there have, of late years, been executed many public works conducive to the health and comfort of the inhabitants, such as the clearing away of jungle in the suburbs, the formation of roads, tanks, and drains, the widening of streets, the building of bridges, and the establishment of Mahomedan cemeteries. In addition to the medical charities, consisting of the Native Hospital, Lunatic Asylum, and Vaccine Establishment, all maintained by Government, further medical aid has been extended to the poor by means of a public dispensary, placed under the management of a native surgeon from the Medical College of Calcutta. Nor has education been neglected. The native youth of the district and surrounding country are taught English literature and various branches of science, and for this object there now stands a college, founded during the government of the Earl of Auckland, on the site formerly occupied by the English factory.

APPENDIX.

NOTE A.

1. The apparatus used by the Dacca weavers comprises the following implements, viz :—

Tatta. The split bamboo used in winding thread.

Natta. Reels.

Mala. The cup of cocoa-nut shell in which the reed revolves.

Churka. Large wheel for winding the thread from a reed.

Churkee. Small wheel.

Kangch Gurra. The wheels or bobbins, with *kangch* rings attached to them used in warping.

Koota. The four bamboo posts used in warping.

Sur. The bamboo rods, placed at intervals between the former, on which the warp is laid.

Jooa. Thin slips of bamboo, substituted for the *sur* when the warp is removed from the warping posts.

Mar. The starch composed of *koie*, lime, and water, used in sizing the yarn.

Satiys. The bamboo rod introduced through the loops of the warp when the reed is applied to it.

Sana or Hana. The reed.

Pykia. The string which connects the *jooa* and *satiys* during the operation of applying the reed.

Duftee. The frame of the reed, lay, or batten.

Kantakoor. The sleyhook.

Sala. The small thin slip of bamboo received into the longitudinal groove of the yarn beam.

Jarnee. The small piece of cane beaten into the form of a brush which is used in arranging the threads of the warp.

Joa. The small bow used to bring the warp threads into a state of parallelism.

Pula. The small oval piece of wood on which the loops of the heddles are formed.

Unu sala. The long cane attached to the former.

Boo. The loops of the heddles.

Nata Nurud. The breast roll or cloth beam.

Pecha Nurud. The end roll or yarn beam.

Joota Duree. The loops of cord in which the breast and end rolls rest.

Killee. The winch for turning round the cloth and yarn beams.

Moonee Kathee. The piece of stick introduced into a mortise of the beam, and fixed in the ground to prevent the latter from turning round.

Biskurum Koota. Scooped shoulder-posts.

Bigura. The pit into which the treadles descend.

Tulpukur. The two treadles.

Chouchulla. The transverse rod or cape to which the balances of the heddles are attached.

Nachunee. The slings of the heddles.

Oubee. The four lateral standards of the loom.

Babaree. The side pieces upon which the *chouchulla* rests.

Mootee Kata. The temple.

Judtis. The weights, or two bamboo rods to which the treadles are fastened.

Makoo. The shuttle.

Dandadaree. The slings of the reed passing through sawn pieces of shell.

Ooreah. The brush made of the fibres of the *nul* plant, used in applying oil to the warp.

Puttee. The apparatus of the loom complete.

2. The names of the processes, &c., are viz.:—

Soot-natana. To reel or wind thread from a reed.

Tane-hutna. Warping.

Soot-mora. Twisting the thread.

Soot-batana. Applying the size to the thread.

- Sana-binna.* Applying the reed to the warp.
Goochee-bandhna. Tying knots.
Boo-burna. Preparing the heddles or harness.
Karullee. A loop.
Chochee. A read of thread.
Pattee. A skein of ditto.
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NOTE B.

A great diversity of opinion exists regarding the particular country to which the ancients gave the name of *Serica*. It has been regarded by various authors, as China, Tangut, Little Bucharina, Serinuggur, Seling, including Kham, and even Ceylon. The geographical position assigned to it by Ptolemy would indicate that it was China; while, on the other hand, the description of its physical aspect, the notice of one of the routes leading to it, the names of the tribes or nations inhabiting it, as mentioned by him and Ammianus Marcellinus, and the circumstance of its abounding in elephants, as stated by Strabo, would all tend to identify it with Assam. Ptolemy mentions that mountains surrounded the *Seres*, or, in other words, that their country was a valley, and that this valley was intersected by two great rivers called the *Oechardes*, and *Bautes*. He describes the former as having a great bend or curve in its course before entering *Serica*, which corresponds with the sudden turn which the *Sanpoo* takes in passing from Thibet into Assam. The *Bautes* or *Bautisus* is described by Ammianus Marcellinus as a river, "*nominis famosi*," and is apparently the *Brahmaputra*, the source of which, denominated the sacred pool—the *deo-panee*—*Brahma kund*, or divine well of *Brahma*, is a celebrated place of pilgrimage among the *Hindoos*. Ammianus Marcellinus more particularly describes the country of the *Seres*, as a territory of great extent, as stretching even to the *Ganges*, and as one of diversified aspect, presenting in some places wide open plains, and in

others tracts of an undulating surface. It was a region of great fertility and most luxuriant vegetation, abounding in woods or forests from which the substance called *sericum*, or silk, was collected. The forests here mentioned are doubtless the jungles of Assam, in which the *muga* silk is found. They are described as "*silvæ sublucidæ*," an expression which seems to refer to the myriads of fire-flies or luminous insects with which these jungles abound. Serica was inhabited by various tribes of people, most of whose names, as mentioned by Ptolemy and Ammianus Marcellinus, correspond with the names of tribes belonging to Assam, as the *Bautæ* or *Batæ* who are Bhooteas; the *Annibi*, the Abors; the *Rhabannæ*, the Rabhas; the *Asmiræ*, the Miris; the *Damnæ*, the Doms; the *Chardi* or *Oeehardæ*, the people of Chardwar; and the *Ottorocorræ*, the people of Outerghorah. The Annibi or Abors are further mentioned as deriving their name from their own mountains (the Abor hills). It contained several cities, the remains or foundations of which are apparently those now found in the midst of the jungles of Assam. The circumstance of strangers not being admitted into Serica has been regarded as an indubitable proof of the identity of that country with China, but the same jealousy of foreigners existed in Assam, and led to their exclusion from it. Dr. Wade mentions that strangers of every description and country were scrupulously denied admission into the latter country. It was accessible from two directions. One route commencing at the Stone Tower, which was reached after crossing the Montes Comedorum, lay through deserts, and over mountains covered with snow, to a pass in the mountain Imaus on the confines of Serica. This appears to have been through Thibet, the pass, doubtless, being one of the *duwars* leading into Assam, such as that of *Chuna*, where formerly a caravan arrived yearly from Thibet, and met the merchants of Assam. The other route, mentioned by Ptolemy, was *via* Palimbothra, on the Ganges, and refers apparently to the road leading to Gowalparah. This seems to be the frontier of Serica, mentioned by Pliny, and Ammianus Marcellinus, who hint that a river formed the boundary of the country of the Seres. Pliny calls this river Psitaras

(probably the Tistha in the district of Rungpore), and states that the road lay through forests (jungle), infested with beasts of prey, and that it was dangerous for people unacquainted with the country to travel to Serica. In speaking of the embassy from the King of Ceylon to the Emperor Claudius, he represents the chief ambassador as stating, that the people of Ceylon knew the Seres through the medium or channel of trade, and that his father, named Rachia, had often visited them. The people described by the ambassador as of gigantic stature and of a fair complexion, were no doubt the people of Bhotan or Thibet, who repaired to Rungpore for the purpose of trading. The ambassador appears to have been a native of Bengal, who carried on a traffic between it and Ceylon, and who was probably selected from being accustomed to travel, to act as guide or director of the embassy. The accounts which both Pliny and Ammianus Marcellinus give of the character and habits of the Seres, as shown by their mode of carrying on traffic with strangers, are applicable to the barbarous tribes bordering on Assam, and along the Garrow and Tipperah hills. The former states that they were a quiet inoffensive people, but that "they fled like wild beasts from the sight of men," or shunned intercourse with other nations, though they were not averse to carrying on traffic with them; while the latter mentions, that when strangers crossed the river to purchase *thread* or other commodities, the Seres made their bargains without interchanging words—estimating the value of the merchandise offered for sale by sight alone, and disposing of their own goods by bartering them for articles of produce of the country, but declining to buy foreign commodities in return. This is very much the character of the Pani Koonch, and other tribes living in Rungpore, and on the frontier of Assam, and indeed of all the tribes along the Garrow and Tipperah hills. They are a shy, taciturn race, and shun intercourse with the people of the plains. They assemble at particular places and barter their goods, consisting of cotton, and formerly the tussur or muga silk, aloe wood, tezpat, and cassia for various commodities, consisting chiefly of

articles of food and ornaments. Like the Nairs of Malabar, they are said to have formerly carried on their barter by depositing their goods at places along the borders of the jungle, and watching until the people with whom they were in the habit of dealing took them and left articles in exchange. This mode of traffic is described by Arrian, in the "Periplus of the Erythrean Sea." The tribe of Sesatæ, mentioned by him as living on the confines of Thina, which Dr. Vincent regards as identical with Serica, appear to have been the Cossyachs inhabiting the range of hills intervening between Assam and Sylhet. Strabo mentions that the Seres constituted a commonwealth, which was governed by a council of 5,000, every one of whom provided an elephant for the use of the State.* This seems to refer to the Raj corporations into which Assam was anciently divided. "The most ancient form of tenure," says Major Fisher, "by which land was held at Assam, was under a grant from the Prince addressed to a body of proprietors, who were erected into a corporation called a Raj, and who possessed the land on terms by which they were bound each for the other and for the whole estate. The Raj was entrusted with the local administration of affairs, and transacted business in periodical meetings." (See "Journal of Asiatic Society," No. 104.) Assam abounds in elephants. The average number exported annually is estimated at 700; a great many are also killed for the sake of their tusks. Assam, indeed, is the only country north of India extra Gangem (Burmah), (the situation assigned to Serica, by Ptolemy), which could have furnished the number of these animals mentioned by Strabo. (See remarks on this subject in the "Journal of the Asiatic Society of Calcutta," No. CLXXIV.

* "Nam Seres tam longæ dicuntur vitæ ut ducentissimum annum excedant. Ferunt etiam quendam optimatum ordinem republicam gubernare ex quinque millibus consiliorum constantem, quorum quisque elephantem reipublicæ præbeat." Strabo (Latin text), p. 702.

NOTE C.

There is no plant in Bengal that is applied to such a variety of useful purposes as the bamboo. Besides being employed in the construction of the implements of weaving, it is used for almost every conceivable purpose to which wood is applied in other countries. It forms the *posts* and *frames* of the roofs of huts; *scaffoldings* for building houses; *portable stages* used in the various processions of the natives; raised *floors*, for storing rice and various kinds of agricultural produce, in order to preserve them from damp; *platforms* for merchandise in warehouses and shops; *stakes* for nets in rivers; *bars*, over which nets and clothes are spread to dry; *rafts*; the *masts*, *yards*, *oars* *spars*, and *decks* of boats. It is used in the construction of *bridges* across creeks; for *fences* around houses and gardens; as a *lever* in raising water for irrigation; and as *flag-poles* in bazaars, police stations, akharas, &c. It is the material of which several agricultural implements are made, as the *harrow*, and *handles* of hoes, clod breakers, &c. *Hackeries* or carts, *doolees* or litters, and *biers* are all made of it. The common mode of carrying light goods is to suspend them from the ends of a piece of *split bamboo* laid across the shoulder. The *shafts* of javelins or spears, and *bows* and *arrows*, *clubs*, *fishing-rods*, &c., are formed of it. It is employed in the manufacture of fireworks, as *rockets*, &c. A joint of it serves as a *holder* for various articles, as pens, small instruments, and tools, and as a *case* in which things of little bulk are sent to a distance. The eggs of the silk worm were thus brought from China to Constantinople, in the time of Justinian. A joint of it also answers the purpose of a *bottle*, and is used for holding milk, oil, and various fluids; and a section of it constitutes the *measure* for liquids in bazaars. A piece of it, of small diameter, is used as a *blow pipe*, to kindle the fire, and by gold and silversmiths in melting metals. It also supplies the place of a *tube* in a distilling apparatus. A cleft bamboo is employed as a *conduit*, for conveying water from the roofs of huts. Split into small pieces, it is used for making

baskets, coops for poultry, *bird cages*, and various *traps* for fishing. A small bit of it, split at one end, serves as a *tongs* to take up burning charcoal; and a thin slip of it is sharp enough to be used as a *knife* in shelling betel nuts, &c. Its surface is so hard, that it answers the purpose of a *whetstone*, upon which the ryots sharpen their bill-hooks, sickles, &c.

NOTE D.

Abstract of the expenses incurred at the Dacca factory in the year 1761 :—

	Arcot Rupees.	
Batta and allowances	25,593	8
Charges diet.....	4,369	4
House and ground rent	2,810	2
Servants' wages	858	0
Military charges	860	11
Durbar	932	0
Bungalows	1,752	2
Repairs	12,410	7
Bungalows at Tezgong	1,019	11
Repairs	1,161	13
Charges, Budgerow, and Boats..	925	13
Charges general	4,973	12

A.R. 57,666 11

NOTE E.

• Pearls are sold annually (and frequently to the amount of two or three thousand rupees) at the fair held in Bickrampore (Vickramapura). They are found in a species of mussel (*unio*) in the rivers of the neighbouring districts of Tipperah and Mymensing, and are collected by a caste called Buddea.

Specimens of these pearls, from Moorshedabad, in Bengal, are to be seen at the Exhibition. They are individually of little value, but as pearls of every sort were eagerly sought after by the Romans, they, doubtless, formed the article of export here mentioned. Those adapted to ornamental purposes are sold at a price ranging from four annas (sixpence) to four rupees (eight shillings) per pair, and the rest are disposed of to native physicians. Occasionally a pair worth 100 rupees (£10) is found.

NOTE F.

Malabathrum was formed of the leaves of *tejapatra* (*cinnamomum albiflorum*). Arrian mentions that the leaves were folded and made into small balls, with the fibres of the plant passed through them; and that when so prepared they were called *malabathrum*. Hence the name appears to be derived from the Sanscrit words *mala*, a garland or string of beads, and *putra*, a leaf, corrupted into *bathrum*. These balls (*pilulæ malabathri*) were formed each of a single leaf, and they appear to have been thus prepared in order that their strength and flavour might be preserved during their transportation to Greece and Rome, where they were used as a masticatory. Dioscorides and Pliny mention that they were placed under the tongue to perfume the breath and act as a tonic to the stomach. The pipes or quills, called *petros* by Arrian, appear to have been the quills of the bark of an allied species of *cinnamomum* or *cassia lignea*, designated *putruj* by the natives of India.

NOTE G.

Nardostachys jatamanshi, a species of Valerian, found in Bhotan. It was imported into Rhandaramacotta (Rungpore) and thence into the Gangetic mart.

NOTE H.

There was another city in India called Gangia or Gange. Cellarius states :—" *Inter ostia fuit urbs Gange Ptolemæi diversa ab Artemidori Gange modo dicta ad superiores partes hujus fluminis.*" The latter was situated north-west of Palibothra. Wilford identifies it with Allahabad.

NOTE I.

Assam was formerly celebrated for its iron mines, and it appears to have furnished the iron referred to by Pliny. "*Ex omnibus generibus palma Serico ferro est. Seres hoc cum vestibus suis pellibusque mittunt.*"—(Plin. Lib. XXXIII., chapter xiv.) "At Doyang," says Dr. Buchanan, in speaking of Assam, "south-west from Jorehat, a day's journey, there is an iron mine which is wrought on account of the king. It supplies the whole country with abundance." In noticing the places where iron-ore is dug out by the Khassias, Lieutenant Yule remarks : "So numerous and extensive are the traces of former excavations, that, judging by the number at present in progress, one may guess them to have occupied the population for twenty centuries."—"Journal of Asiatic Society of Calcutta." Vol. XI., page 853.) The skins mentioned by Pliny are called *serika dermatata* by the author of the "Periplus," and seem to have been the buffalo and rhinoceros hides of Assam, of which the Sylhet shields so celebrated throughout India are made—they are famed both for their strength and the fine polish of their surface, produced by the juice of the *semicarpus anacardium*. These articles the Seres exported along with their cloths, which, doubtless, were the silk fabrics of Assam.

NOTE J.

The different articles specified here are all enumerated in the "Periplus" and "Digest of the Roman Law," as imports into

Egypt. Lac, the *laccus chromatinus* of the "Periplus" is described by Ctesias and Elian as a purple dye, produced by a small insect found on a tree called *siptachora*. It is found in great abundance in Assam. Aloe-wood (*agaru*) is the product of a tree which grows in the mountainous country between Sylhet and Assam, and is an article for which the former place has always been famous. Indigo and sugar are both mentioned by Arrian as exports from India. Musk and the long glossy hair of the tail of the yak or Thibet cow (*bos gruniens*) were, in all probability, commodities that passed through the Gangetic mart. The latter appears to be the article called "*capilli Indici*" in the "Digest." A fly-flap (*chowree*) made of this hair was one of the insignia of royalty among the Hindoos. The Chinese make tufts of it for their caps, and the Turks formerly used it to adorn their military standards.

NOTE K.

The *sangara* are mentioned as *monoxula*, or boats formed each of a single tree. A boat of this description is called *saranga* in some of the eastern districts of Bengal, and consists below of a tree scooped out and built up with tiers of planks on its sides. Large boats of this kind called *bulam* at Chittagong, and *goddoo* in Arracan, are built with several rows of planks fastened together with coir and ratan, and are employed in coasting navigation. Methold mentions them early in the 17th century. "Once a year there arriveth at Masulipatam, from thence (Bengal) a fleet of small vessels of burden, about 20 tons, the planks only sewed together with cairo (a kind of cord made of the rinds of cocoa nuts), and no iron in or about them." (Purchas's "Pilgrims.") The *colandiophonta* are supposed by Wilford to have been vessels of the province of Coulan, in Southern India.

NOTE L.

Fragrant aloe-wood is still an article of export from Sylhet

to Bassora and Jidda. It is purchased both in the form of wood and *attar* by Mogul merchants for transportation to these marts.

The horn of the rhinoceros is supposed in the East, to have an alexipharmic virtue; and it was an article of which drinking cups were formerly made for kings.* The two Mahomedan Travellers mention that the karkadur was found in different parts of India, but that the horns procured in the kingdom of Rami were the most esteemed,—a remark which is corroborated by Linschoten in speaking of Bengal, and hence confirmatory of the identity of the two countries. In mentioning the rhinoceros, called *abada* by the Portuguese, he states that “its reputed virtue against poison proceedeth from the herbs which Bengala yieldeth, for in other places these horns are not near the price of those in that kingdom.”

Cowries (*cyprea moneta*) have long been used as money in the eastern part of Bengal. Marco Polo mentions white porcelain shells as current in the kingdom of Karain, and Marsden thinks that these were cowries introduced into that country via Sylhet. They were the only currency in the latter district a few years ago. The revenue was paid in them, and such was the accumulation of them at one time in the treasury at that place, that several hundred tons of them had to be sent to Dacca in order to be sold by auction. In 1777 a sale of them, to the amount of 20,800 rupees, is mentioned in the Dacca records. Their average value is about 2,500 for the rupee.

NOTE M.

One of these saints, named Jelall Odeen, whose tomb and mosque at Sylhet are held in great veneration by the Mahomedans, appears to have made many converts in this part of Bengal about the beginning of the 14th century. Ibn Batuta came from the Maldives, in 1324, for the express purpose of visiting him.

* Vide Leyden's "Life of the Emperor Baber;" also Thiuberg's "Travels in South Africa."

NOTE N.

The Portuguese first settled in Bengal about the end of the 16th century. In 1586, Fitch remarks that Isacan (Azim Khan), the ruler of the province, was "a great friend to the Christians." St. Augustine missionaries were residing at Tezgon, near Dacca, in 1599, in which year the church at the former place was built. Manrique mentions that they had a small but neat convent, and that though they were denounced by the Mollahs as Kaffirs, who ate pork and drank wine out of pure hatred to Mahomed, yet the Emperor Ackbar protected them and assigned them land. This appears to be the origin of the tenure of the landed property in the vicinity of Dacca, now belonging to the Roman Catholic Church in Bengal. Early in the 17th century the islands at the mouth of the Megna became the resort of outlaws from Goa. Sebastian Gonzales Tibao, a deserter from his regiment at the latter place acquired possession of Sundee, and maintained a considerable number of troops and vessels. Many of the Portuguese settlers were subsequently in the service of the Nawaubs of Dacca as gunners and artificers. On the recapture of Chittagong, by Shaista Khan, in 1666, most of them belonging to that place were located at Feringy bazar, in Bickrampore.

NOTE O.

The Cosmin is laid down in some old maps as running from the north-east and dividing into two branches, on one of which are placed Bengala and Chatigan. The Brahmaputra and Megna were known by the name of Cosmin early in the 17th century: but subsequently the former river north of Dacca was called Laquia (Luckia), the name now given to one of its branches. According to Malte Brun, M. Wahl considers the Bengala of Arabian writers as identical with Chittagong. ("Malte Brun's Geography," Vol. III., p. 122.)

NOTE P.

Called Boklah by Abul Fazel. The name of Bhatta was also given by him to this part of Bengal from its being under the influence of the tides. In the Sunderbunds, south of Chunderdeep (the site of Bacola), and near the mouth of the Megna, were two towns called Bhatecala and Chandican, the sites of which are now overrun with jungle. They are mentioned by travellers in the early part of the 17th century as the places where the Roman Catholic Missionaries first settled in Bengal.

NOTE Q.

In 1789 there were sixteen denominations of rupees current at Dacca: viz., ten of Arcots, three of Siccas, and three of Sonauts. The former constituted the coin in which the ryots paid their rents, and in which all commercial transactions were carried on. From their multiplicity, and the varieties of each denomination, none but a professed money-changer could venture to receive a large sum without the risk of incurring a considerable loss, and hence, when any considerable payment was made in them, they were taken to shroffs in order to be valued—a process described in the Dacca revenue records as “tedious and vexatious in the extreme.” The amount of silver in circulation in the Dacca province in 1789 was estimated at 70 lacs (£700,000).

FINIS.